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A REVIEW OF OUR KNOWLEDGE OF SYPHILIS WITH ESPECIAL REFERENCE TO THE VALUE OF SALVARSAN AND NEO-SALVARSAN IN ITS TREATMENT *

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It is the duty, as well as the prerogative, of the President in retiring from office to address the Fellows of the Academy. In the selection of a topic the first essential is that it shall interest the members; the second, that the writer shall be familiar with his subject, that his words may have some weight. To fulfill the first I propose the review of a disease which enters into almost every domain of medicine and surgery and trust the same will interest you. The advances made in our knowledge of this disease during the last few years have been greater than during as many centuries before. To meet the second I have chosen to speak on a subject to which I have given twenty-five years of thought, study and practice.

HISTORY

Our more intimate knowledge of syphilis probably does not date back to more than thirty-five years ago, when in 1879 Klebs and 1882 Martineau first succeeded in animal inoculation with syphilis. Their work could not be fully substantiated by others and absolute proof at this time was not possible. But it marked the beginning of an era of historical advances in the field of syphilis and consciously or unconsciously each discovery stimulated subsequent research. Metchnikoff and Roux, in 1903, succeeded in regularly infecting the chimpanzee, using the eyebrows and the sexual organs as the sites of inoculation. Sclerosis and secondaries in the form of crusty *syphilides* followed and infection of animal to animal became possible. Neisser, in the Java expedition, proved the generalization of the virus following the primary effect on monkeys, but neither the definite lesion which resulted was rich in *spirochaetae* nor the secondary symptoms in abundance. Bertarelli, in 1906, succeeded in inoculating the rabbit, although not regularly, using the anterior chamber of the eye as the site. This was probably first accomplished by Haensell in 1881 but, as already stated, the specific nature of the reaction could not then be proven. Parodi, in 1907, inoculated intraperitoneally with regular results of syphilis and demonstrated the possibility of the production of the chancre of the testicle, a field soon more thoroughly covered by Uhlenhut and Mulzer, and which has opened the road to extensive researches in chemotherapy. Finger and Landsteiner showed through monkey inoculation the infectiousness of the gumma; Neisser, Hoffmann and Mulzer the infectiousness of the semen. Uhlenhut and Mulzer, in 1911, succeeded in transplanting the virus through the placenta after intravenous injection of intra-peritoneal fluid into the gravid animal, whose young showed signs of infection seventy days after birth. Again, Uhlenhut, by using very young animals, and which he inoculated intra-cardially, produced generalized infection.

But the most important point of the recent progress in our knowledge of syphilis is, without a doubt, the discovery of the *spirochaeta pallida* by Schaudinn and Hoffmann in 1905, which event was soon followed by the discovery of the serum reaction by Wassermann, Neisser and Bruck. In 1909, the introduction of *salvarsan* formed a further step in our knowledge, which epoch was made historical and the name of Ehrlich immortal to medicine when he favorably recommended its use to the world before the Koenigsberg meeting of German scientists in 1910. And the recent findings of Noguchi and Moore of the *spirochaetae* in the cerebrospinal fluid; and their demonstration in brain substance of living paretics by Forster and Tomasczewski have placed for all time to come the causative factor of locomotor ataxia and general paralysis of the insane in syphilis, where it has long been suspected to lie. The same may be said of many aortic diseases, of apoplexy, of certain forms of myelitis and softening of the brain and spinal cord, meningitis, endarteritis, and brain tumors.

It is a noteworthy fact that the recent advances made in our knowledge of syphilis have been rather by the laboratory man than by the practical syphilographer.

* Presidential Address, Detroit Academy of Medicine, Oct. 14, 1913.

SALVARSAN AND NEO-SALVARSAN

It is not necessary to repeat here the history of the use of arsenic, in the treatment of syphilis, with its concomitant dangers; but it is probably well to emphasize the fact that the discovery of *salvarsan* was not a mere accident but the result of the most painstaking work of many years in laboratory and animal experimentations to find a remedy capable of the destruction of the *trepanoma* without injury to the host. Ehrlich and Hata began their experiments on the lower animal; preliminary applications were made to man; then the drug was issued to a selected number of physicians in different parts of the world for trial in human syphilis. And no better evidence of Ehrlich's genius is afforded than the admirable manner in which he assumed the entire responsibility and guided the adminstration of the remedy against a storm of skepticism, criticism and aroused jealousy.

Three memorable years have since elapsed and probably at no time in the history of medicine has a remedy been so thoroughly and extensively tried throughout the civilized world. In the early, in the active stages of syphilis, in tabes dorsalis, in general paralysis, in cerebro-spinal lues, in diseases of the cardio-vascular system, in surgery, laryngology, rhinology, otology, gynecology, in obstetrics, pediatrics—yea, in every phase of syphilis and in every other division and sub-division of medicine has it been tried and with few exceptions found efficient. It is, therefore, proper that the accumulated evidence of such a vast experience be gathered together and the results placed before you.

Salvarsan (606) chemically is di-chlor-di-amido-di-oxy-arsenobenzol. By a chemical combination "it is rendered inert until the same is broken up and a large amount of arsenic can be safely introduced into the body. For example, as about one-third by weight of the substance is arsenic, in giving 0.6 *gram* one gives nearly 3 grains of arsenic or the equivalent of nearly 4 grains of arsenious acid, but the usual toxic action of this large amount of arsenic is prevented by the chemical arrangement. When, however, the compound is broken up by combination with organic material, the arsenic, which is in a reduced trivalent form, acts vigorously in a nascent way and kills any protoplasm with which it comes into contact. Combination of *salvarsan* with *spirochaetae* seems to be effected by means of the *amido* and *hydroxy* groups, which seem to anchor the compound to the *spirochaetae* and thus bring the arsenic into action. A certain amount of the compound affects the tissues also, as is seen in its tonic action, but this amount is small, except in overdoses or in the presence of diseased tissues, which are more prone than normal tissues to anchor the drug." (Nichols).

Many differences of opinion were expressed both in this and in foreign countries as to the adoption and utility of *salvarsan* in the treatment of syphilis. It was freely forestalled to disappointment, but fate has been kinder and experience has proven its worth. Most of the obstacles surrounding its use have been surmounted, the technic in its employment has been perfected, so that the fear of its injection has been diminished, if not vanished.

When the use of *salvarsan* was first introduced in human syphilis it was Ehrlich's belief that he had a drug which at a single dose would destroy the agency of syphilis—*a therapia magna sterilisans;* but in the field of actual clinical experience this hope was soon dispelled. With a few exceptions, recurrences were frequent. On the other hand it was found possible to give doses of the drug at frequent intervals; but this alone did not suffice. The remedies of centuries could not be discarded and today the best results are obtained by the judicious combination of *salvarsan* with *mercury* and under given conditions with the *iodides.*

Difficulties of administration stimulated endeavor to find a remedy as efficacious but less irritating and within a year *neo-salvarsan* (914) was given to the profession. It is a direct derivation of *salvarsan;* a condensation of the latter with sodium formaldehyde-sulphoxylate; is neutral in reaction, easy of solution, but less stable, and must be dissolved in freshly distilled water at the time of administration at a temperature not to exceed 68° to 71.6° F. It is given in dosage of 3 to 2 of *salvarsan* and in ampules form .15 to .90 grm., the amount-varying with the sex, age, weight and physical condition of the patient. The claim, that it is more neurotropic than the old, that in large doses it is more apt to produce untoward effects, has not been our experience.

Owing to the reasons already outlined, we now limit ourselves to the use of the *neo-salvarsan.* Claim is still made that it is not as efficacious, but a critical report to the American Dermatological Association at its last meeting gives it equal effectiveness and a review of the records of about 7,000 injections by various operators shows that untoward symptoms are less after the *neo-salvarsan* than after the old. Certainly in our practice it has stood the test. With the old method of intra-muscular injection we had our proportion of necrosis, but since the use of the *neo-salvarsan* we have had untoward symptoms with one patient only and never a slough. I have seen but one case of sloughing at the elbow and that was in the practice of another. It has been observed that with the second injection a re-action may be experi-

enced which was absent in the first; this we also have observed and believe it to be due to anaphylaxis.

IMMUNITY AND DIAGNOSIS

Concomitant with the discovery of the causative factor of syphilis and the means to its destruction, recognition of its presence by other than clinical signs has been made possible; so that recognition, treatment and eradication go hand in hand: and these means of recognition and control have cleared up definite factors, formerly clinically known but never scientifically explainable. The old theory that a syphilitic could not be re-infected is now found to have its basis first in the fact that he never was free of the syphilis, the *spirochaetae* being still carried; the second on the general law of the resistance to re-infection of an already infected host. As soon as the body is free of the *spirochaetae* re-infection is possible. Again, Colles' law—namely that the mother may nurse its syphilitic offspring without apparently being affected—is based on the fact that the mother has a latent infection; and, again, Profeta's law—that the healthy child may nurse its syphilitic mother with apparent immunity—has as a basis the fact that the child is itself syphilitic. But that in both of these cases the syphilis should remain mild is "due probably to some modification of the law of infection when contracted through the uterus." (Craig).

Never before has the necessity of the positive and early recognition of syphilis been more emphasized. Surgery of the initial lesion removes a focus of infection from which *spirochaetae* spread through the lyhphatics to devastate the tissues and prompt and vigorous treatment at an early date means the lessening of many foci.

While it is true that the initial lesion takes on many forms, from the apparently simple abrasion to the characteristic Hunterian induration, some difficult of recognition, yet at times the clinical manifestation is so definite that no further corroboration is necessary. When, however, the diagnosis is in doubt, several methods remain by which the presence of the *spirochaetae* may be demonstrated, more especially *the dark field illumination.* Stained preparations, notably by Giemsa's and by Levaditi's methods, have been tried, but the processes are tedious and so far the results are not very accessible to the man in general practice. Inoculation is not practical.

Spirochaetae are very seldom found in the primary stage before the third or fourth week but always before the appearance of the secondaries; are profuse in the secondary; and rare in the tertiary. Just what the mechanism is by which the tissues are damaged we do not know. "It is probable that the excessive motility of the organism and its mere mechanical action play some part; but the question of possible toxins and various antibodies is largely one for the future to determine" (Nichols). Knowledge of the life cycle of the *spirochaeta pallida* is yet vague.

Supplementary to the Schaudinn and Hoffmann's discovery came almost as a consequential endeavor of the laboratory the pure culture of the *pallida* in 1911, with which the name of Noguchi stands preeminent. With this, Noguchi's test, known as *the luetin,* a suspension of the killed cultures, an intradermical inoculation of the arm of .03 to .04 c.c. is given, and, if positive, a response is manifest within five to six days at the site of inoculation.

Curiously enough and, fortunately, possibly, the reaction is more sensitive at those stages of syphilis which are not so responsive to the Wassermann and *vice versa.* Thus it is absent in the initial stage, and usually with the early secondaries, unless provocation has been induced by energetic treatment; and is present in the latent and late stages when the Wassermann is often non-responsive. The reaction is not fully understood, but is due probably to a specific sensitization.

Intimately associated with the diagnosis and treatment of syphilis is the determination of the *Wassermann or the complement fixation reaction.* While it is not our purpose to enter into the technic, nor to consider the advantages and disadvantages of the various modifications, especially Noguchi's, it suffices to say that in general much reliance may be placed on the findings of the competent expert, provided his results are correctly interpreted.

Laboratory reports usually bear the signs of (++), (+), (+—) and (—) to indicate the degree of absoluteness or negation of inbibition of haemolysis; the sign (++) indicating complete inhibition; (+) at least fifty per cent of inhibition; (+—), inhibition less than fifty per cent; and (—), a total lack of inhibition; but it must be borne in mind that the stage of the disease and the effect of treatment on the disease affects the degree of inhibition and the signs must be so interpreted. Thus, while the sign (++) always means syphilis, in the early stage the sign (+) may be accepted as diagnostic. The same may be said of late and latent cases, where the history of infection is unquestioned. Again, in a patient who has been thoroughly treated even the sign (+—) may show the need of further treatment. The generally accepted view that in the face of clinical manifestations a negative reaction is not conclusive evidence of the absence of syphilis is borne out in practice. The sign (—) in the initial stage means nothing; yet in the secondary or suspected secondary the sign (—) may be of the utmost value, for were

syphilis present the Wassermann would undoubtedly be positive. Again, a (++), a strongly positive, and under the limitation named a (+), a positive, may be accepted as the indication of syphilis, as the few other diseases in which it is claimed the reaction may be present namely: framboesia, leprosy, scarlet fever, malaria, recurrent fever, pest, beri-beri, psoriasis, lupus erythematosus, scleroderma, pellagra, tuberculosis, pneumonia, joint rheumatism,—hardly call for differential diagnosis or are absent in this clime. Where the symptoms are obscure, where action rests upon the Wassermann findings, it is well that several specimens of the blood be sumbitted to the test and, if possible, to different experts. For "until some standardized antigen is obtained and used with the same technic by all observers" (Craig), reports will vary. Similar findings by different experts of blood drawn on different days may be accepted as final.

Just how soon after the initial lesion appears a Wassermann may be of value, just how late in the leutic history its value may be denied are matters for future determination, but in a general way it may be said that in cases of undoubted syphilis a positive reaction may be expected in eighty per cent. in the initial stage in the fourth to eighth week; in the so-called secondary ninety-five per cent.; in the tertiary eighty-five per cent.; in the latent cases, where no active lesion is present, but in which the history is plain, sixty-five per cent.; in congenital syphilis ninety-five per cent.; in apparently normal women with syphilitic children fifty per cent. In the primary stage the reaction is usually negative before treatment, but soon becomes positive. The degree of positiveness diminishes (under treatment) about the third to become negative before the eighth week.

As might be expected a positive reaction of the cerebro-spinal fluid may be obtained long after repeated examination of the blood have been shown to be negative; so that final decision should be withheld in the suspected case until all means have been exhausted. It is easily seen how the *spirochaetae* may be encapsulated in the tissues, be free in the cerebro-spinal fluid, yet absent from the blood stream.

It has been observed that after a *salvarsan* injection a weakly positive or a negative Wassermann has within a few days become positive, and so frequently has this phenomenon been found in latent cases that the test, now known as the *provocative Wassermann,* is resorted to to determine if the patient is actually cured of his syphilis. A patient, showing a negative Wassermann for a year or more, is given an injection of *salvarsan;* the reaction is positive; syphilis is still present and another course of treatment is indicated.

INDICATIONS FOR TREATMENT

Experience in treatment has fixed some definite facts. As stated, the hope of the destruction of all the *spirochaetae* with one dose of the *salvarsan* soon failed of realization; but its remarkable efficacy in all stages of syphilis has been established. As soon as the diagnosis of syphilis is made, and it should be made as early as possible, treatment must be inaugurated; a treatment vigorous, responsive and continuous within definite lines; accurately controlled by the Wassermann, luetin and provocative Wassermann tests. If the patient is seen during the initial stage, the removal of the lesion, if practical, lessens by so much an infective focus. The exact number of injections which should follow must of course vary in accordance with conditions; but, as a fairly routine measure, a second should follow within a week; then a course of mercurials for a month; a third injection; another course of mercurials for a month; a rest for a period of four to six weeks; and, if no evidence of syphilis exists, a Wassermann. If the reaction is negative, the condition of the patient must be kept under observation by repeated Wassermanns every two to four months for a year or two or more. A relapse of clinical manifestations, a return of the Wassermann to the positive are indications for the repetition of the treatment.

As a standard of cure that of the army, though with difficulty entirely applicable to private practice, may be accepted: "One year without treatment, without any suspicious clinical signs, with several negative Wassermann reactions and no positive ones, and with a negative provocative Wassermann reaction and leutin test at the end of the year."

If the patient is seen during the secondary or latent stage, the same measure of treatment should be inaugurated, varying with the intensity of the symptoms or the activity of the reactions, but with at least four to six injections in two to three months with intensive mercurial treatments.

Of the manner of treatment of the tabetic and paretic it may be briefly stated that to be successful it must be extremely energetic, fifteen to twenty injections as a minimum. But at its best the results are usually not favorable.

When mercury is administered, it should be given in doses to bring results. Where the symptoms are urgent and in all cases where it is expedient, the daily inunctions (of vasogen-mercury, grams 3) are most effective. Next to them preference is given to the injection; the solution used being a matter of individual practice. As a routine treatment we give the one per cent. aqueous solution of the mercuric iodide (red) gr. 1/6, two injections a week.

We all remember the injury to the optic

nerve which frequently followed the use of other arsenical preparations, the fear which was expressed that it might follow the use of Ehrlich's remedy; the care with which we ascertain every deviation from the normal of the condition of the eye, especially of the optic nerve; the exact condition in so far as laboratory examinations would reveal of the state of the kidneys—and how even minute variations were signs of danger and contra—indicated its use. Fortunately, such fears have not been realized; no optic atrophy has followed; the presence of kidney irritation and albuminuria, especially when evidently due to the syphilitic process, has not been inimical, and a far greater freedom in the use of *salvarsan* has been exercised. This does not imply a want of care or that judgment is not to be exercised in the selection of the cases for injection or that no contra-indication in its use exists. Dangers must always exist; unusual reaction, sometimes most alarming, will occur: nausea, vomiting, diarrhoea, a high fever, severe headaches and backaches, and even loss of sensation and of motion, impairment of sight and suppression of the urine follow the injection; but when compared with the number of injections given with no untoward symptoms the percentage is small. Advanced age, cachexia, severe diabetes, liver and cardiac diseases and organic changes of the bloodvessels and chronic nephritis are the chief contra-indications.

The intra-muscular and the intravenous injections of the *salvarsan* were followed not infrequently by this nausea, vomiting, diarrhoea, fever, and suppression of the urine. This necessitated confinement to the hospital or to bed frequently as long as a week, rarely less than two to three days. With the lessened tendency to these phenomena with the use of the *neo-salvarsan* the time of confinement hardly exceeds twenty-four hours and, as any reaction is not likely to occur within two to three hours, the injection may be safely given in the large majority of cases in the office, the patient being sent immediately to his bed. What this ability to maintain his secret means to the patient you fully realize.

METHODS OF ADMINISTRATION

Soon after the *salvarsan* was introduced, the method of administration was the intra-muscular, the subcutaneous being almost at once abandoned as too liable to be followed by dangerous infiltration. The method is still held by a few to be more efficacious on account of the slowness of absorption of the arsenic and, therefore, the longer activity against the *spirochaetae;* but the pain and induration and not infrequent sloughing which has followed the encystment of the mass—which sloughing was very slow, lasting sometimes many months, and always painful—led to the almost universal adoption of the intravenous route. And even with the lesser danger of the *neo-salvarsan* the intravenous route is preferred, on account of the almost total absence of pain, the quickness of absorption, the greater rapidity of action and the quicker elimination.

To lessen the pain and the frequent sloughing of the intra-muscular injection it may be given in some ten to twelve divided doses, of one to two c.c. each, into the buttocks.

For the intra-muscular injection, any syringe, which holds 10 c.c. to 15 c.c. of fluid may be used; the injection being made usually into the buttocks.

Many devices for use in the intravenous injection have been suggested and tried out, some clumsy and ineffective, some efficient but cumbersome. The frequency of administration renders necessary simplicity of method and so we have abandoned all but two, each in itself the simplest of its kind, *the gravity method* and what I shall call *the direct method.*

When the intravenous method was first used, the vein was cut down upon and laid bare before it was entered; today entrance is made directly into the vein. Where the vein is not easily fixed, where it easily collapses, where in fact any difficulty exists in finding entrance, the gravity method is preferred. Where, however, the case may be selected, the direct method is so simple that it at once forces itself upon us. Simple as it is to state, some training in its use and preparation is needed, for *salvarsan* or *neo-salvarsan* is a powerful remedy and with each injection new difficulties may arise; and so certain principles of administration must be followed. In the first place entrance must be had into the vein and secondly the needle must be kept within the vein during the injection of the fluid. To secure the first, after the usual preparations for administration have been made, the arm must be placed in a horizontal, firm position upon some hard substance, preferably a table; the usual rubber bandage secured around the arm with the forceps and a little of the blood allowed to flow into the syringe to denote safe entrance. The clamp is then released and the fluid very slowly injected. After the withdrawal of the needle the point of entrance is covered with flexible collodion. Every effort should be made to prevent injection of the *neo-salvarsan* into the surrounding tissue. If but little escape (and this can usually be determined by the bulging of the tissue) little harm ensues. Some pain may be present; but the mass will absorb in a few days. Should the whole syringe full be injected into the tissues, great pain may ensue, the arm and forearm become greatly swollen and evil consequences be expected. But, fortunately, with the *neo-salvarsan* little fear need be apprehended. The

arm is placed at rest, is surrounded with ice-bags or poultices, and in a few days much of swelling has subsided; in a few weeks the tissues have returned to the normal. With us the ordinary Luer 10 c.c. aspirating needle is preferred.

With the gravity method a glass tube, held in a high position on a stand, containing 250 c.c. of solution is used. To this is attached a long rubber tube, at the other end of which is a double stop-cock, to one end of which is attached the needle, to the other a small syringe to permit the flow of the blood into the syringe before the fluid is drawn from the tube, that safe entrance into the vein may be assured.

CONCLUSION

In conclusion: Is syphilis curable; in the properly treated cases is the danger of tabes and general paralysis eliminated; is marriage at any date or at an earlier date permissible; is hereditary syphilis to be obsolete? No satisfactory answer can yet be given to any of these questions. Nor can a satisfactory answer ever be given until the methods of recognition and the means of eradication have become so simple that they can hold their place in the armamentarium of the physican of average intelligence and attainment. The disease is so prevalent, its pernicious activity enters so intimately into every phase of human ailments that the weapon used must be effective enough and its mechanism simple enough to be understood by all of us; for the number which falls under the care of the expert forms but a small percentage of the whole. But such advances have been made within the last few years in our knowledge of this class of diseases; so keen have the people become to be enlightened in preventible diseases and with enlightenment so insistent on eradication of the evil, that the decade may not be far distant when science—organized knowledge—and art,—her handmaid,—may find a solution, and a disease, so destructive to human frailties, moral and physical, may itself be effaced from the earth, or at least the danger of contamination of innocent parties be removed. So be it!

—*J. Henry Smith Bldg.*

THE UTERINE MYOMA AND MALIGNANCY *

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Just one hundred years ago Sir Charles Mansfield Clarke, Physician in Ordinary to the Queen, writing of the uterine myoma, or "fleshy tubercle" as it was then called, says: "Nothing is known respecting the cause of this disease." He was astute enough diagnostician, however, to observe that "The *os uteri* may at the same time be affected by the corroding ulcer" (cancer), and "In many cases of this malady the appendages of the uterus are also found diseased, and it is by no means uncommon to find dropsical tumors of the ovaria, or of the broad ligaments, existing at the same time." We have come a long way since Sir Charles taught his students the use of iodine for the relief of myomatous conditions; and great advances have been made in our knowledge of the natural history of these growths, but in spite of all this—the mass of literature devoted to its discussion and the teachings of every day experience—a large number of the profession still cling to the antiquated idea that the uterine myoma is a benign neoplasm.

THE UTERINE MYOMA NOW CLASSIFIED AS A DANGEROUS NEW GROWTH

I think that the credit for the initiative in a larger knowledge of the uterine myoma and, latterly, the appreciation of its really serious nature, belongs to Koeberle of Strasburg; it was mainly through the adoption of his operation of supravaginal hysterectomy, introduced in 1863, that material for study began to be collected.

With a lessening mortality from abdominal operative procedures, resting on asepsis and anesthetics, an increased familiarity with disorders of the other pelvic organs associated with myomata naturally went hand in hand, and the acquirement of material led to statistical information which has finally placed the uterine myoma in its proper position among the dangerous new-growths to which the female pelvic organs are disposed. We now know that the myoma is capable of giving rise to, or is associated with, a large number of secondary conditions serious to the well-being of the individual, and may undergo various pathological degenerations inimical to health if not incompatible with life.

STATISTICS OF MYOMATA AND MALIGNANCY

Although it was long known that cervical cancer sometimes coexisted with myomatous tumors of the uterus, it was not until the microscope and improved technic made it possible, that the frequency of malignancy, especially of the fundus uteri, could be determined; and it is only within a little more than a decade past that painstaking investigations have given us positive knowledge of these conditions.

In 1904, Charles P. Noble called attention to the striking frequency of malignancy and appendigeal disorders associated with uterine myomata. His tables were based on 1188 cases of this disease from the statistics of seven different operators. To this number I now add

* Read before the Section on Gynecology and Obstetrics, M. S. M. S. 48th Annual Meeting at Flint, Sept. 4-5, 1913.

1972 cases of *myomata* from the reports of five other operators, published since the appearance of Noble's paper. This makes a total of 3,160 cases. In this number there were found 189 cases of malignancy, or five and nine-tenths per cent. Allowing for inaccuracies, where the observations of so many individuals are concerned, I find that the figures given correspond quite closely with those obtained by others in smaller series of cases, and may therefore be accepted as approximately correct to the present time.

While the present state of our knowledge does not permit of the assertion of a casual relationship between cancer of the uterine cervix and myomatous growths, the co-existence of the two conditions is of sufficient frequency to suggest a suspicion, and should receive further investigation. According to Winter, in cancer of the uterus in general, fiften cases of malignancy of the cervix are met with to one of the fundus, showing the preponderance of cervical cancer in uncomplicated cases.

Hertel, in 1,100 cases of myomata from Klein's laboratory, found eight cases of cervical cancer; while in 468 operated cases of *myomata* there were sixteen cases of fundal cancer, approximately four time as many as of the cervix, McDonald, in 700 cases, states that, while twenty cases of *adeno-carcinoma* complicated fibroids, only six of cancer of the cervix were found in his series, the fundal growth being about three times as frequent as the cervical.

Winter found *myomata* and fundal carcinoma in 1.2 per cent. of cases; Sawey, 1.7 per cent.; Piquand, 9 per cent.; and Hartel 3.4 per cent. In Winter's second series, the occurrence of sarcoma was found to average 3.6 per cent.; while Sawey gives 1.7 per cent.; Piquand 6 per cent.; and Hertel 2.8 per cent.

From these findings, and many others, it is evident that the myoma plays an important role in the etiology of uterine cancer. This fact, however, has not been sufficiently taken into consideration, the larger efforts to save human life from the effects of this disease having been directed to operative procedures *after* the establishment of the malignancy.

EARLY OPERATION INDICATED IN ALL CASES OF MYOMATA

Now prophylaxis or prevention does not consist in the removal of existing cancer but in anticipating and forestalling its occurrence. In the myoma we are dealing with a new-growth which has been proved to be a causative agent in malignant degeneration. What can be more logical, therefore, than the removal of these tumors before they have had an opportunity to manifest their baneful influence?

Malignancy of the *fundus uteri* associated with *myomata* is an insidious conditon; its presence. as a rule, being so masked by the symptoms of the latter growth that it is rarely possible with absolute certainty to determine its existence until the uterus has been opened and inspected or subjected to microscopical examination. In these cases procrastination is fatal.

Malignancy of the uterus is most likely to develop in the presence of submucous *myomata,* less so in interstitial growths and not at all, unless by metatasis, in the subserous variety. This knowledge of location should guide us in the selection of operative procedure.

Subserous and small intramural tumors which do not impinge on the uterine cavity may be removed by myomectomy, but large multiple or single growths occupying the greater portion of the uterus demand total removal of that organ. In the light of the increasing number of reports of recurrence of malignancy in the cervical stump, supravaginal hysterectomy is not to be recommended when the tumors occupy the latter positions. If this operation is undertaken, the specimen obtained should be immediately subjected to rigid microscopical examination and, if malignancy is discovered, the cervical stump removed without delay. In these cases of stump recurrence it is altogether probable, as Neugabauer has pointed out, that cancer exists in the cervix at the time of the original operation but is unrecognized. LeSorb records thirty-one cases in which this was so, and the subjoined report seems to support the fact.

THE ADENOMA A POSSIBLE MENACE

I desire at this time also, to call attention to the possible seriousness of the *uterine adenoma.* This development is put down by Cullen and most writers as a benign new-growth, but I believe that its innocence is open to question, and that in time its potentiality for evil will be better recognized and understood. Brandt believes that the fungous endometritis so often found accompanying uterine *myomata* acts as a connecting link between the myoma and malignant degeneration; Roberts states that the adenoma is "in some cases not of a simple character, in fact" he says, "some cases described as adenoma pass insensibly over the border line and become malignant"; while Gebhard finds that "the *adenoma malignum* is in a sense a pre-stage of adeno-carcinoma." The number of cases of malignancy apparently proceeding from this new growth reported in the literature of the past ten years would indicate that the adenoma is capable of mischief and demands a more careful study than it has hitherto received.

As the pedicle of the uterine polypus is frequently the seat of carcinomatous and sar-

comatous changes, every growth of this kind removed should be carefully examined by the microscope and, where malignancy exists, the entire uterus should be removed.

CONCLUSIONS

1. In the fight against cancer no means should be left untried to eradicate this greatest scourge of the human race.

2. As the uterine myoma has been found to be an active agent in producing malignant degeneration in this organ, it follows that such tendency should be anticipated by the early removal of these growths.

3. Under the conditions outlined in this paper, radicalism in the treatment of uterine myoma becomes conservatism.

A CASE OF SO-CALLED "MALIGNANT RECURRENCE" IN THE CERVICAL STUMP

Mrs. S. entered my service at Harper Hospital in March, 1913. She had been for some time under the care of a general practitioner who evidently tiring of the case, had turned it over to the hospital. The patient had a large myomatous growth of the uterus which extended above the umbilicus. She was exceedingly anemic from repeated hemorrhages, her color was a pale jonquil yellow; and she was very feeble from the blood loss and enforced stay in bed.

After a short preliminary treatment, by which an attempt was made to bring up the woman's general condition, I did a supravaginal hysterectomy on the 21st of March. No unusual difficulties presented at the operation. A very small remnant of the cervix was left, the amputation being below the internal *os*. Convalescence was uninterrupted but slow; the patient's recuperative forces being at the lowest point. She was discharged from hospital in good condition on the 20th of April.

There was nothing especially noteworthy in the history of convalescence except two conditions which, although not uncommon in this class of cases, may or may not have had a bearing on subsequent developments. These were: headache, and dizziness, which developed on the sixth day and recurred during the entire period of hospital residence, and swelling of the feet, which appeared on the ninth day. On the fifteenth day it is noted that the face was blotched, and she had a fainting spell which lasted several minutes. During recovery the patient's temperature reached 100.2° on one occasion: the pulse never going above 92. The blood at this time was examined by Dr. Sill, who reported as follows:

Red blood cells	2,878,700
Hemaglobin	35%
Color Index	0.64
Leucocytes	2,334
Polynuclears	59%
Mononuclears	40%
Eosinophiles	1%

The red cells stain very poorly and vary much in shape. One normoblast was seen. The hemoglobin shows a slight improvement. The leucocyte count has dropped, and the proportion of the different varieties is not far from normal.

All of these conditions could be accounted for by the prolonged and serious hemorrhages from which the patient had suffered.

Subsequent History—In July the patient reported that she was again bleeding. At this time she was in excellent physical condition; the skin was of good color and the cheeks were rosy. She felt well and was quite active. Examination showed a cauliflower growth the size of a half dollar projecting through the *os* of the small cervical stump. This growth bled freely at the slightest touch. There was thickening above the cervix, and some of the pelvic glands appeared involved. A small piece of the new growth was snipped off and placed in the hands of the late Dr. Heneage Gibbes for examination. He reported that the condition was one of round cell sarcoma.

Subsequent Operation—The patient returned to Harper Hospital and on July 20th, four months from the date of the first operation, I again opened the abdomen and removed the offending portion of the cervix and as many of the pelvic glands as were found to be enlarged. The fungoid mass was first curetted away from below and the cervical stump freed from its vaginal attachments, a long forceps being left on the stump by which to deliver it after separation from above. Above, the neoplasm bulged upward as large as a hen's egg, the mass extending to the right and involving the ureter. Both ureters were dissected out for about three inches. On the left side of the pelvis there was a gland the size of a plum. All glands and fat were removed on both sides to the bifurcation of the iliacs. The peritoneum was then carefully adjusted over all raw surfaces, a gauze wick carried down through the vagina, and the abdomen closed. During the pelvic dissection a small opening was inadvertently made in the neck of the bladder, and was immediately closed by kangaroo tendon.

It occurred to me that it might be of interest to ascertain whether malignant changes were to be found also in the original tumor, of which the present cervical growth was a recurrence. Dr. Gibbes, in an elaborate report, stated that: In connection with a leiomyoma there was an advanced *spindle* cell sarcoma of the *fundus uteri*. The cervix and glands removed showed a *round* cell sarcoma.

Following the second operation the patient was very weak, but gradually rallied, and continued to exhibit an interesting series of phenomena until the fifty-fourth day, when she quietly passed out.

During this period there were certain marked symptoms which persisted at varying intervals. She was, however, so far advanced in convalescence that she was to have sat up out of bed on the twelfth day, when I left the city. The subsequent course of events are taken from my note-books as set down by the nurse from day to day.

About this time, 12th day, an involuntary discharge of urine began and continued during most of the succeeding days. This may have been due either to the giving away of the sutured bladder from extension of the malignancy, or possibly was from a leaky ureter.

The patient was very nervous through the re-

mainder of life and most of the time complained of headache or pain in the head and of dizziness. On the 28th day there was pain in the right shoulder, which appeared on the 37th day in the left shoulder.

On the 29th day, numbness of the left arm; fainted. On the 32nd day, sat up out of bed. Anorexia at intervals throughout course of disease; she was also frequently nauseated, vomiting several times on the 51st day.

33rd day: Twitching of left side and leg and left side of face, the attack lasting thirty minutes.

35th day: Had a slight convulsion. Seen by Dr. J. E. Emerson.

37th day: Severe backache all night.

38th day: Left hand and leg swollen.

51st day: less swelling of leg but parts more painful to patient when moved. Involuntary movement of bowels.

54th day: In stupor and unconcious all forenoon and could not be roused. Slight discharge from nose and mouth. Pulse slower and weaker. Died at 3 P.M. There was no autopsy.

During the whole course of the disease following the second operation the temperature never went above 101.2° (second day), remaining mostly in the vicinity of 99°, but at times reaching normal. The pulse ranged from 120 to normal, and three hours before death was 64.

A study of this case seems to show that malignancy was beginning in the cervical stump at the time of the orignal operation, and had a total hysterectomy been performed it would have probably resulted in saving the patient's life. The occurrence of the two varieties of sarcoma in the same organ is unusual, but Dr. Morse informs me that when such recurrence does take place it generally assumes the embryonic type.

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X-RAY AID IN THE RECOGNITION OF PYLORIC AND DUODENAL ULCER; A NEW SIGN OF DUODENAL ULCER. *

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The place of the roentgen examination as an essential part of every complete gastric examination is now assured. Most internists and surgeons now recognize the necessity of adding the X-ray findings to other clinical evidence in every gastric case. Yet it is only within the last three years that the development of the X-ray technic has afforded evidence of such material aid in the recognition of gastric and doudenal ulcers, that the routine use of this method in gastroenterology seemed warranted. Elsewhere on this program will be given a discussion of the present status of the X-ray examination in gastro-intestinal work; hence I may proceed at once to the discussion of the subject in hand.

TECHNIC

The X-ray examination is essentially fluoroscopic, roentgenograms being made only when required for purposes of record or comparison and when gall stones are suspected. It should be remembered, however, that not over forty or fifty per cent. of gall stones can be shown by the X-ray, even under the most favorable circumstances. It is very rare indeed that the plate examination adds any essential fact to the information gained by the fluorescent screen.

The patient, whose stomach must be thoroughly empty, is given a mixture of twenty grams of bismuth[1] stirred in four ounces of water. After the behavior of the bismuth water has been studied, the patient is given a regular bismuth meal, consisting of ten ounces of farina mush containing one part in eight by weight of barium sulphate. Sometimes it is more convenient to use an Oriental clotted milk, such as kephir, fermolac, lactone, yogurt, etc. The Oriental clotted milks suspend the bismuth better than any other form of bismuth meal. The ingestion of the meal is watched by means of the fluoroscope and the patient is then examined at appropriate intervals, usually at the end of the third hour, the sixth hour and further as the circumstances may indicate, to determine the following points: Emptying time, size, shape, position, character of peri-

* Read before section on General Surgery, 48th Annual Meeting M. S. M. S. Flint, Sept. 4-5, 1913.

1. Although the examination is ordinarily spoken of as a "bismuth meal," bismuth is not now employed. Especially prepared barium sulphate is now used in the place of bismuth.

staltic waves, spastic manifestations, identification of pain points, mobility of the stomach and duodenum, bismuth flecks, and such special points as may arise.

FINDINGS AS REGARDS EMPTYING TIME

In studying the *emptying time* of the stomach, the following X-ray findings are suggestive of duodenal ulcer:

The stomach begins to empty at once and at a very rapid rate, bismuth being seen throughout the small intestines within a very short time. If the meal has not been a large one, the stomach may be entirely emptied within an hour. When the meal is larger, delayed pylorospasm may be set up and a small residue remaining longer than six hours may result. In the majority of cases, quick emptying will be observed. Duodenal ulcer cases which do not exhibit this quick emptying are those where actual mechanical obstruction exists, as by cicatricial constriction. It must be admitted that there are many cases of duodenal ulcer in which the emptying time of the stomach is quite normal.

This quick emptying of the stomach is not found in duodenal ulceration alone. It is also observed in cholelithiasis; in ulcer of the stomach where there has been perforation with adhesions to the pancreas; in extensive gall bladder region adhesions; and in early carcinoma of the pylorus where an infiltrating process renders the sphincter patent but has not yet produced actual stenosis.

Hypermotility at first, with later delay, especially if the meal has been a large one, may usually be considered as indicative of tardy pylorospasm associated with delayed hypersecretion, and is very suggestive of duodenal ulceration.

Suggestive of pyloric ulcer is delayed motility, with hypersecretion and "early" pylorospasm. Ulcer in the body of the stomach rarely produces delayed motility.

GASTRIC TONUS

The stomach is hypertonic or orthotonic in duodenal ulcer, but usually hypotonic or atonic in pyloric ulcer. In ulcer of the pylorus, one usually finds a condition of hypertonicity alternating with a condition of hypo- or atonicity. The alternation may be noted every four or five minutes, and when present is almost diagnostic of pyloric obstruction. The observation of this phenomenon has led to the conception of systole and diastole of the stomach (Cole).

Marked delay in the clearance of the stomach, associated with gastric dilation, is likely to be due to a benign cicatricial obstruction. Occasionally one finds marked gastrectasis with dilation in a case of pyloric ulceration which has undergone malignant degeneration, but in the majority of cases, pyloric obstruction with marked stasis without gastric dilation is significant of a carcinomatous pyloric obstruction.

SPASTIC MANIFESTATIONS

In addition to pylorospasm, which has already been referred to, certain other spastic manifestations are frequently seen in cases of gastric and duodenal ulcer, one of which constitutes what the writer believes to be a new sign of duodenal ulcer.

A spastic localized indrawing of the greater curvature is often seen at the level of an ulcer in the stomach. It was formerly considered that this spastic indrawing was pathognomonic of gastric ulcer at the level of the spasm, but the writer's experience has shown the incorrectness of this supposition.

In February, 1913,[2] the writer described this spastic hour glass stomach as a sign of duodenal ulcer, describing seven cases occurring within a year in which this sign was noted. Baron and Barsony had just reported two cases in which a spastic indrawing had been observed on the greater curvature and yet at operation and later at autopsy, no ulcer could be found in the stomach, but there was a very marked duodenal ulceration. I am now able to report sixteen operated cases of duodenal ulceration in which this spastic indrawing, high up on the greater curvature, was noted. It should be stated that there have been a number of other cases of duodenal ulceration (operated) in which no spastic indrawing was observed. In at least two other cases, the patient was examined on three successive mornings. On the first and third mornings, the spastic indrawing was noted. On the second morning, although the patient was observed repeatedly, no such spastic indrawing could be seen.

In differentiating between a spasm due to gastric ulcer and spasm due to duodenal ulcer, the writer has observed that in duodenal ulcer, there is not a point of pain on pressure over the lesser curvature corresponding to the level of the spastic indrawing; on the contrary, there is pain on pressure over the duodenum; and manipulation of the duodenal region increases the depth of the spastic indrawing. This spastic manifestation, however, has also been observed in one case of Grave's disease and in some cases of appendicitis and in at least half a dozen cases of gall stones in which, at operation, the surgeon was unable to find any duodenal or gastric ulcer.

Pseudo-hourglass formations may be due to gas distension of the colon, pressure of a deformed costal arch, etc. Often the spasmodic constriction is very transient, sometimes being

2. Western Section, American Roentgen Ray Society, Chicago.

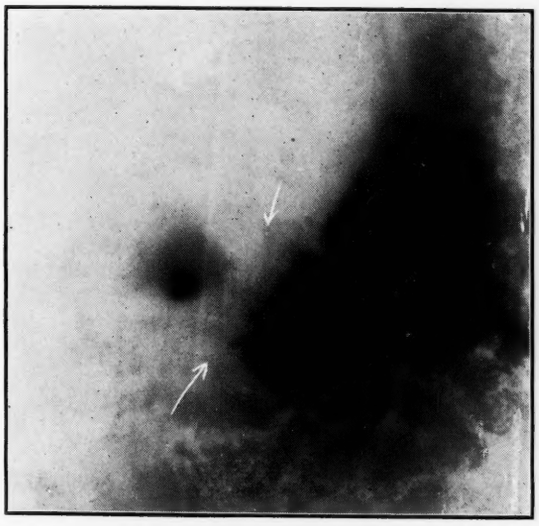


Fig. 1.

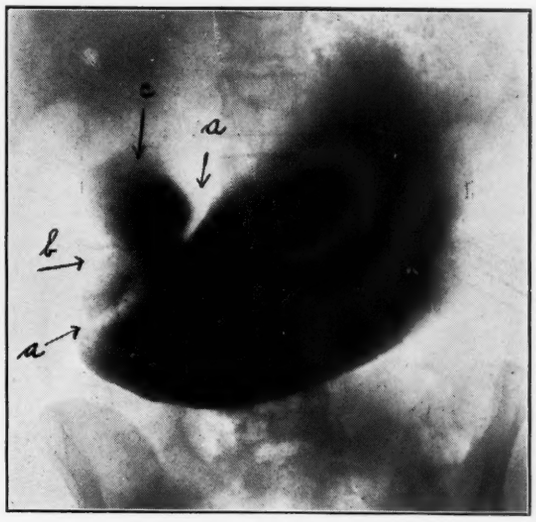
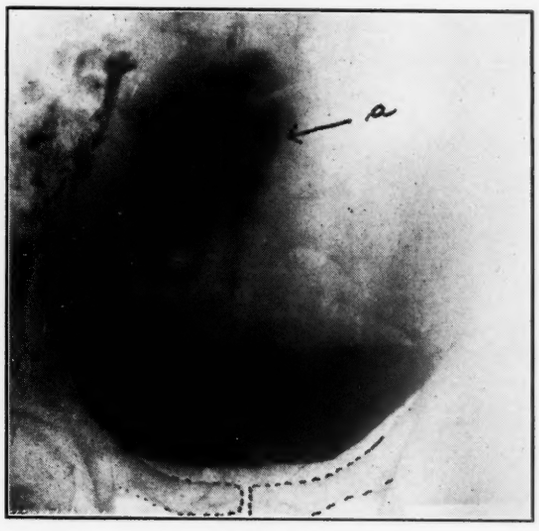


Fig. 2.

Fig. 3.



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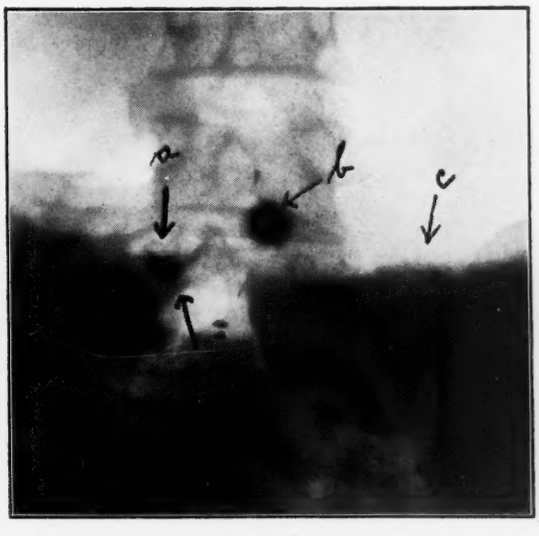

Fig. 6.

Illustrating Dr. Case's Article on Pyloric and Duodenal Ulcer.

For description see page 581

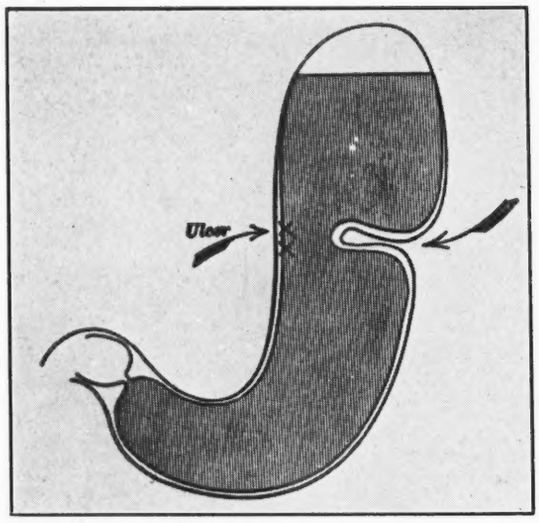

Fig. 7.

Fig. 8.

Fig. 9.

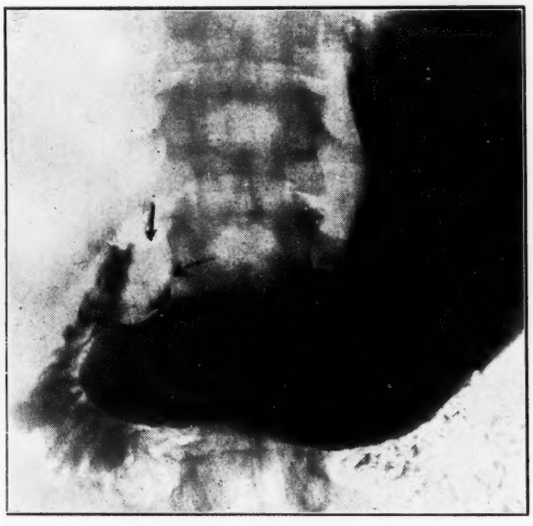

Fig. 10.

Fig. 11.

Fig. 12.

Illustrating Dr. Case's Article on Pyloric and Duodenal Ulcer.

For description see page 581

observed only for the first few moments following the bismuth meal, sometimes moving as an unusually deep peristaltic wave.

PAIN POINTS

A subjective pain point corresponding with the shadow of the duodenum is very significant. Pain on pressure over the duodenal shadow is significant of duodenal adhesions, and, though often due to complicated duodenal ulcers, may also be due to other causes, as, for instance, cholecystitis. A case of uncomplicated duodenal ulcer probably will not exhibit any point of pain on pressure. The location of this point of pain on pressure may be further tested by examining the patient during deep inspiration and deep expiration.

PERISTALTIC WAVES

In cases of duodenal ulceration, the peristaltic waves may be perfectly normal. In cases of pyloric ulcer, other than simple ulcer, the peristaltic waves are usually exaggerated in depth and often in number. In both pyloric and duodenal ulcer, fluoroscopic observation will demonstrate that the peristaltic waves proceed clear to the pylorus without hindrance.

THE DUODENAL BULB

The bulb of the duodenum normally contains a collection of bismuth during the entire period of digestion. Where the duodenal bulb persistently fails to fill, the indication is duodenal ulcer or periduodenitis with resulting adhesions. This same appearance has been observed in pancreatic carcinoma.

Sometimes duodenal ulceration causes a persistent filling defect in the shadow of the duodenal bulb. This is often very satisfactorily studied under the fluorescent screen, but in heavy patients, a series of plates will be required to determine this point.

Unusual filling of the entire duodenum is a frequent observation in cases of duodenal irritation, not only in duodenal ulcer, but in gall stones, or periduodenal adhesions from any cause. This unusual visibility of the duodenum is an indication rather of a patent pylorus than of lag in the motility of the duodenum. When the cicatrix attending duodenal ulceration obstructs, the filling of the duodenum is very characteristic, marked distension of the duodenum being present on the upper side of the constriction.

In cases of pyloric stenosis due to ulceration, the duodenum is seen not at all, or only with difficulty. Causing the patient to lie upon the right side for a few moments and then turning quickly on the back while holding the breath frequently permits better filling of the duodenum and more accurate study of its outlines.

In rare cases, a fleck persists in the duodenum in the crater of an old ulcer. The writer has seven operated cases in which a bismuth fleck in the duodenum proved to be in the crater of an ulcer. More commonly the duodenal bulb retains a residue of bismuth for some time after the stomach has been emptied, but this residue is larger than the crater of an ulcer and does not, except in the rare cases referred to, cling to the ulcer crater.

In the differentiation between gall stones and duodenal ulcer, the X-ray frequently renders material aid. As stated above, the writer has demonstrated that galls stones, when present, may be successfully shown in properly made roentgenograms in fully forty per cent. of cases where stones are present.

Within the last year and a half, the writer has been able to demonstrate gall stones in more than fifty cases by means of the X-ray. In many more cases, contributary evidence is afforded by the X-ray examination[3].

CONCLUSIONS

From the foregoing, it appears that in certain cases, especially cases of simple pyloric or duodenal ulcer, the X-ray findings may not be significant of anything other than the normal. But in the great majority of cases, in the writer's experience, the X-ray examination is likely to prove of great value, especially when the findings are carefully studied in connection with the other clinical data, and differentiation between pyloric and duodenal or gall bladder lesions is frequently made possible.

DESCRIPTION OF PLATES.

Figure 1. A small annular carcinoma at the pylorus. Emptying time longer than ten hours. Stomach not yet dilated. The arrows showing the filling defect due to carcinoma. In the region of the pylorus the navel marker shows.

Figure 2. Benign cicatricial obstruction at the pylorus, following old pyloric ulcer. Note the enormous dilatation of the stomach, requirng longer than thirty-six hours for complete emptying. a, a, a, peristaltic wave; b deformity due to extensive adhesions; c pylorus, the seat of ulcer.

Figure 3. Benign pyloric stenosis, active ulcer. Marked dilation. Exaggerated depth of peristaltic waves. Periodically the stomach relaxed and the waves were scarcely noticeable. a, a, a, peristaltic waves; b pylorus, the seat of ulcer.

Figure 4. Residue in the stomach twenty-four hours after the bismuth meal in a case of benign cicatricial pyloric obstruction. a, navel marker, near which is a collection of bismuth in the small intestine. Lowest border of the stomach reaches almost to the pubes.

Figure 5. Pyloric ulcer with perigastric adhesions, producing obstruction of the duodenum in the last third. Exaggerated depth of peristaltic waves. Delayed emptying. a, a, dilated duodenum; b, pylorus.

3. For the details of technic see paper read before the American Medical Association, Minneapolis, 1913, Surgical Section.

Figure 6. Six hours after the bismuth meal. Deep ulcer just on the duodenal side of the pylorus. Bismuth in crater of ulcer. Mechanical obstruction. Delayed emptying. a, a, ulcer crater filled with bismuth; b, navel marker; c, residue in stomach six hours after meal

Figure 7. Diagram of spastic indrawing on the greater curvature, formerly considered pathognomonic of ulcer on the lesser curvature opposite the spasm.

Figure 8. Radiogram of persistent spastic indrawing on greater curvature. Peristaltic waves began above and passed the spasm, but did not obliterate it. Ulcer on lesser curvature opposite the spasm. a, spastic indrawing; b, peristaltic wave.

Figure 9. Spastic hourglass stomach, caused not by ulcer on the lesser curvature, but by duodenal ulcer.

Figure 10 Callous duodenal ulcer, producing deformity in the duodenal bulb.

Figure 11. Callous gastric ulcer on lesser curvature just proximal to the pylorus.

Figure 12. Gall stones. The terminal ileum and the spastic colon are filled as the result of a bismuth meal.

DIRECT BLOOD TRANSFUSION.*

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In the present discussion of this subject we will consider but two phases:

First, The indications for direct transfusion, and second, The method of choice.

Outside of the various experimental fields, the indications, which require the introduction into the circulation of an increased quantity of all the blood elements, are clear cut and there should never be much doubt as to when this procedure should be adopted.

Transfusion, however, is rather frequently done when the simple administration of serum or even saline solution would answer almost equally as well and in this class of cases the practice should be discontinued. Again, this operation is frequently applied in cases in which there is no rational indication for its performance—a procedure that will do much to bring the operation into disrepute.

The chief blood element that is desired when direct transfusion is indicated is, in all probability, the red blood cell. It has been shown that the withdrawal of blood up to a certain percentage of the total volume is almost invariably followed by recovery and that the loss of a very small amount in excess of this per cent is usually followed by sudden death. This certainly would indicate that death from hemorrhage, as experimentally performed, was in reality a true tissue asphyxia—in other words a sufficient number of red blood cells must always be present so that a certain definite amount of oxygen can be supplied and if the percentage of oxygen is decreased beyond this needed amount death promptly results.

The other blood elements supplied by direct transfusion are the leucocytes, platelets and serum. Theoretically the administration of a large number of white blood cells in acute infections should be of value. However, when we stop to consider that such diseases are for the most part combated by specific ferments which in most instances require a period of from three days to two weeks for their development it is plain to see that the introduction of normal leucocytes will give but little help in a critical case even though the leucocytes may be the cell capable of forming the desired ferment.

With regard to the platelets but little is known but it is assumed by several authors that they play an essential part in blood coagulation. However that may be, the administration of serum, which in all probability contains many platelets when used, answers this purpose so admirably that a separate use of platelets is not desired.

Billings, in an excellent article on "Internal Hemorrhages; Can We Control Them?"[1] has clearly given the indications for the use of serum. Where the amount of blood lost in any given case of intractable hemorrhage is not sufficient to be of danger to the patient, the use of serum, preferably human, is always indicated in preference to direct transfusion, inasmuch as the coagulation time is decreased equally as well with serum as with the entire blood.

Bernheim[2] recently has advocated the use of transfusion after hemorrhage in gastric or duodenal ulcer, especially in the quiescent stage a few days following active bleeding. If the patient's condition is seriously embarrassed this is well and good, but if the bleeding area cannot be controlled at the same time, the introduction of too great a quantity of fresh blood may so increase the pressure as to renew hemorrhage even after a period of many days.

Bernheim also readvocates the use of direct transfusion in pernicious anemia. While the number of cases of pernicious anemia which have been treated in the manner reported so far is not great, yet there is not, so far as I am able to ascertain, a complete cure on record. There is always temporary improvement probably due to the fact that red blood cells capable of functionating in a normal manner are given to the patient. But, such cells are not nucleated; they are not capable of reproducing and furnishing new healthy red blood cells to the patient and we should not logically expect anything but what we obtain—temporary improvement only.

It seems reasonable to divide the necessity

* Read before the Section on Surgery, M. S. M. S. 48th Annual Meeting at Flint, Sept. 4-5, 1913.

1. Jour. A. M. A. Vol. LXI. No. 4.
2. Jour. A. M. A. Vol. LXI. No. 4 p. 268.

for the introduction of new blood in any given case according to the physiological action of the various blood elements. According to this, the chief indication for the administration of whole blood is when the red blood cells are needed for their normal physiological action.

In this class of cases would come severe hemorrhage from any cause whatsoever that can be surgically cured; also following repeated small hemorrhages in cases in which the hemoglobin index is low and there is a marked decrease in the number of red blood cells. In this latter division would fall most cases of gastric or duodenal ulcer and repeated hemorrhage from ulcer of the lower intestinal tract or rectum. In such cases, when transfusion is indicated it should be performed just before or during the radical operation, for the permanent relief of the cause of hemorrhage. By thus supplying fresh blood elements the radical operation is performed with less risk to the patient both from the anaesthesia and the operative procedure.

With regard to the use of transfusion in acute infections, as stated above, it is difficult to conceive that the addition of fresh blood would be of very great benefit. It is true that a small amount of general proteolytic ferment would be given the patient but no ferment specific for the micro-organism causing the disease would be present unless the donor had recently recovered from the same infection. However, the addition of such a ferment is not desired in such cases as the serious condition of the patient is in all probability caused by a too rapid destruction of the micro-organism causing the disease and consequent liberation of its poison and a farther increase in the amount of this specific ferment would simply hasten the end.

Recent work by Butterfield and Peabody[3] has proved that in experimental pneumococcus infection the oxygen combining power of the blood is diminished and there is a marked decrease in the percentage of oxygen in arterial blood. Peabody[4], in a study of lobar pneumonia, found that in the terminal stages of this disease there is a progressive loss in oxygen content in the blood. This loss in oxygen content is associated with a loss of the ability of the hemoglobin to combine with oxygen due to the formation of met-hemoglobin.

The above work certainly points out the uselessness of attempting to prolong life by the administration of oxygen in terminal pneumonia. Inasmuch as the cause of death is apparently closely related to the formation of met-hemoglobin and thus to the inability of the red blood cells to supply sufficient oxygen there is a rational reason for benefit from direct blood transfusion in this infection.

In such conditions as gas poisoning or other forms of asphyxia, transfusion is indicated also for the desired replacement of lost hemoglobin. In such cases, as well as in pneumonia, it is easily understood that the withdrawal of blood —before transfusion—will be of advantage inasmuch as red blood cells no longer capable of functionating will be gotten rid of as well as a certain percentage of gases contained in the serum which might combine with the hemoglobin of the freshly introduced corpuscles. In such cases transfusion should follow immediately after blood letting in preference to being performed at the same time.

THE METHOD OF CHOICE

The difficulty attendant upon satisfactory blood transfusion is well attested by the number of different instruments and methods that have been employed.

It was formerly thought that in order to obtain the best results an artery of the donor and a vein of the recipient should be used. By this method the flow of blood is more certainly secured because of the arterial pressure. However, this method requires the dissection of one of the important limb arteries of the donor and thus makes the operation more formidable than if the vein to vein anastomosis were used.

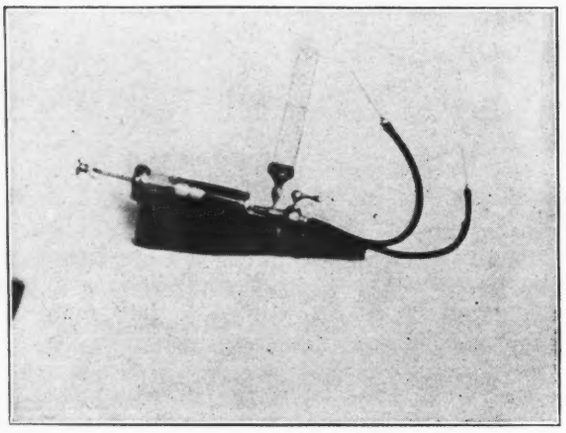
Soresi[5] has shown that a vein to vein anastomosis is of equal efficiency if the jugular vein of the recipient is used, thus taking advantage of the negative pressure in this vessel.

It is needless to go into detailed description of the many various clamps that have been devised to unite the vessels of the donor and recipient. They are all of about equal efficiency and each operator generally gives preference to the type that he is familiar with. Personally, I prefer the paraffined glass tube as it allows of slightly more space between donor and recipient and is easily applied. Whatever method of union is applied, however, the flow of blood is dependant upon either the venous or arterial pressure of the donor, depending upon the vessel of choice, and the resistance to this flow offered by the vessels of the recipient. While Soresi's contention that the jugular vein is the vein of choice for the recipient is anatomically correct for this method, yet, a vein of an extremity would be the vessel of choice if positive flow could always be assured.

The only means by which a vein to vein anastomosis of absolute certainty can be obtained where veins of the extremities of both donor and recipient are used requires that a positive pressure, *under control of the operator*, can be applied to force the blood into the recipient's vein.

3. The Action of the Pneumococcus on Blood, Jour. Exper. Med. 1913, XVII. 587.
4. The Oxygen Content of the Blood in Rabbits with Pneumococcus, Jour. Exper. Med. 1913 XVIII, 1.
5. New York Med. Jour. Nov. 9th, 1912.

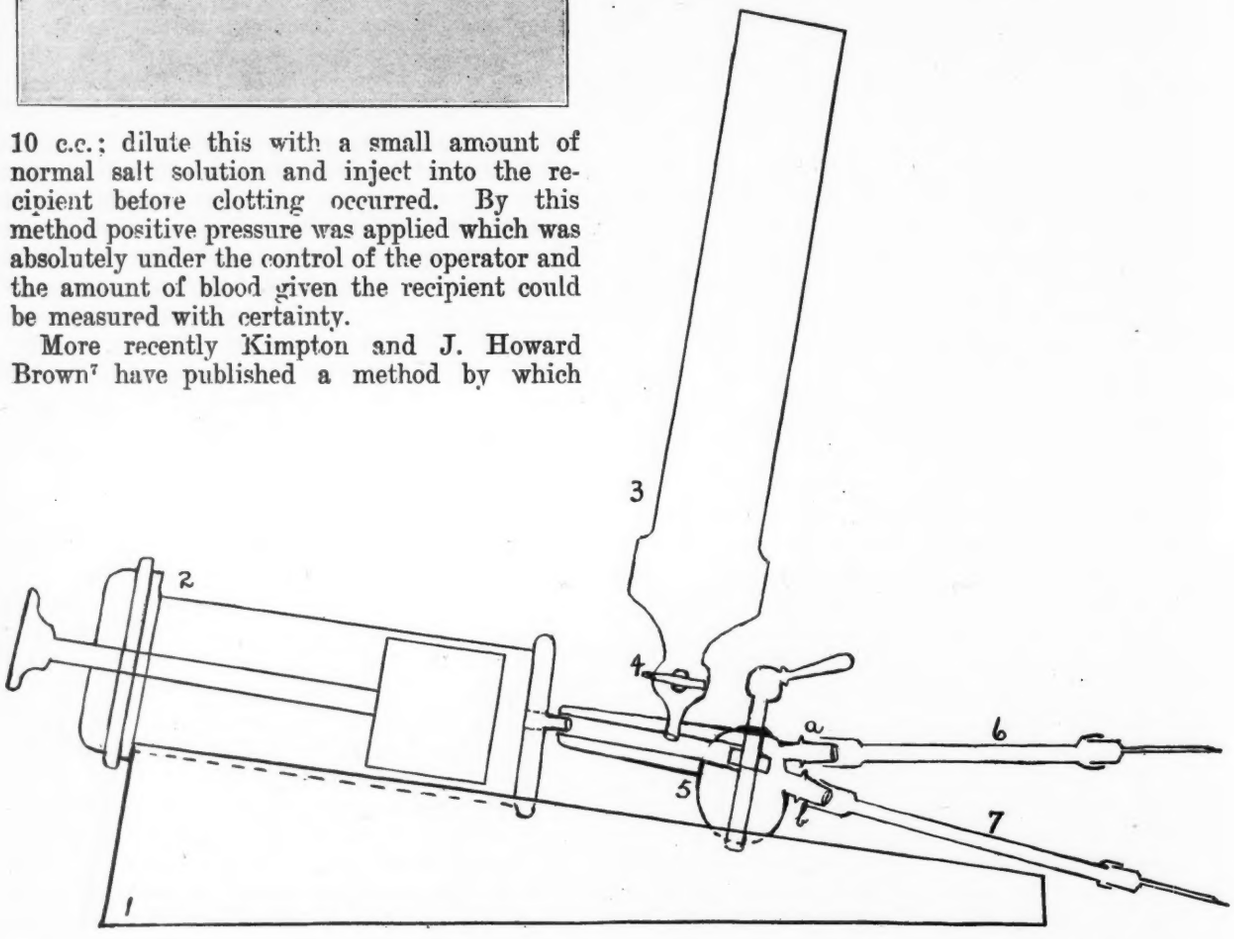
Cooley and myself[6] showed that it was possible to withdraw blood from the vein of the donor into a glass syringe in quantities of



10 c.c.; dilute this with a small amount of normal salt solution and inject into the recipient before clotting occurred. By this method positive pressure was applied which was absolutely under the control of the operator and the amount of blood given the recipient could be measured with certainty.

More recently Kimpton and J. Howard Brown[7] have published a method by which blood is drawn into a specially designed paraffined glass cylinder from the donor and then forced by pressure from an air pump into the vein of the recipient. This method is accurate and positive but has one disadvantage over the method given above, in that it requires the exposure and subsequent ligation of the vessels employed.

In applying the principle first used by Cooley and myself in a given case when it was desired to transfuse a large amount of blood, Freund[8] developed a very ingenous and satisfactory apparatus. This consists of two needles connected to a glass syringe by means of a two-way stop-cock. Above the stop-cock is a saline container for diluting the blood. Freund has transfered as much as 150 c.c. of blood from one person to another and he and I have transfused rabbits from the external jugular of one rabbit to the ear vein of another with ease. It is not possible to take the blood from the ear vein of a rabbit because of the length of time required to refill the vein after emptying.



1. Wooden inclined base. 2. Twenty-cubic-centimeter syringe. 3. Glass cylinder for normal saline solution. 4. Stop-cock. 5. Two-way irrigator with stop-cock and attachment to syringe. 6. Shorter tube with larger needle leading from donor. 7. Longer tube with smaller needle leading to recipient.

By means of Freund's apparatus we have a method that is positive. It requires no incision or anaesthetic of any kind and is so simple that it can be performed without difficulty by any competent practitioner.

In conclusion I would simply call your attention to the fact that in fully 30 per cent. of cases direct transfusion is an emergency opera-

6. Jour. A. M. A., Feb., 1913.
7. Jour. A. M. A., July 12, 1913.
8. Jour. M. S. M. S., Sept., 1913.

tion. We now have in this method a safe way of transfering blood even under the most adverse conditions. Concerning the amount of blood needed for any given case it may be stated that cases suffering from gas or any other form of hemoglobin using poisoning need a larger amount of blood than those in which the procedure is adopted following simple hemorrhage.

DISCUSSION

DR W. E. MC NAMARA, LANSING.

I have been very much interested in this paper, and it has brought out several things that I had not heard. I began the first time, to take an interest in Carrol's papers in 1908. I was located in the mining district, and had very little laboratory facilities, and became very much interested in transfusing a number of dogs. I carried out quite a number of his original operations, or experiments, on dogs; and it happened that in a few months I had a case of typhoid fever, of uncontrollable hemorrhage, in which I was able to use the transfusion. Since then I have transfused four others with about the usual results.

I certainly do agree with Dr. Vaughan in his conclusions that this is an operation of last resort, and that it should not be entered into without due consideration, and after having exhausted every other means. Even in those cases, in such a thing as illuminating gas poison, which is of course an almost positive indication for this; but I find, if it is possible, a great many of the cases that seem to be hopeless at the beginning, do quite well with ordinary treatment. I would like to say that in my opinion no case of gas poison should ever be allowed to proceed without transfusion. With regard to the technic, Dr. Vaughan has brought that out very well. I have, in experimental work, gone through all these cases, as they have been published in the journals, in regard to the different apparatus used for doing the operation. I would like very much to see Dr. Vaughan's new plan; it sounds very reasonable. The only objection I could think of, would be in the quantity that one would be able to get in a reasonable time. But in regard to this it seems to me that every one who is doing any kind of surgical work, or in extensive medical practice, should be familiar with the technic, and not allow a case of illuminating gas poison, or secondary hemorrhage, or a number of the other indications that Dr. Vaughan has mentioned, to die without having tried this treatment; not to proceed with transfusion on everybody, but to hold this in reserve, and as a last resort, and transfuse every single one, if possible, before the patient dies.

DR. HUGO A. FREUND, DETROIT.

Dr. Vaughan was very kind to mention this little apparatus which I have been using for about six months, not thinking it had any special efficacy of any kind, until one day I happened to show it to Dr. Vaughan and he thought it was worth while reporting. I had used it in about seven cases up to that time and had been able to transfuse small quantities of blood with very favorable results. Every one, as the doctor says, is agreed that there are certain technic difficulties in doing direct transfusion; that is the difficulties of getting the vein—making proper anastomosis and knowing how much blood is flowing from the donor into the recipient, and so on; then again, as has been brought out, we are not always where a surgeon can immediately give his skill, towards such a procedure.

This little apparatus' value consists principally in delaying the coagulation time of the blood. Every one is aware that diluting normal blood with normal saline solution will delay coagulation time. I have tried it in a great number of cases, that is taking the blood directly from a patient and diluting direct, with different proportions of a saline solution, and find if you dilute the normal blood with, up to twenty per cent. of cold normal saline solution you can delay coagulation on an average of about two to seven minutes. We have diluted up to twenty per cent. say five minutes—some blood does not coagulate in over eleven minutes, but the average time was a little over seven minutes. That is the gross coagulation. I did not use any method of coagulation in that particular time in that particular experiment, because it is really the gross coagulation that makes the difference, because if normal blood is diluted with a saline solution the probability is that delayed coagulation when it takes place is sudden; it does not coagulate in small clots, but there is a sudden coagulation takes place. This little instrument, I devised for merely practical purposes of putting relatively small quantities of blood from the donor into the recipient. It consists of a stop cock and an air cock with attachments here that will hold a normal saline solution—20 c.c., a syringe with an inclined base, the purpose of the inclined base being if any air gets into the syringe, of course it will stay at the end—the larger needle for the donor and the smaller needle for the recipient. The cold solution is in this (indicating), on top. I open that stop cock here, and draw some solution into my syringe, and then fill both of these tubes, and needles with the normal salt solution. The stop cock here is then turned off and having 4 c.c. of saline solution in here, I withdraw this syringe, and at the same time withdraw the piston until 20 c.c. of blood is in this piston. The stop cock is then turned in the other direction, and injected into the recipient. In this way small amounts of mixed solution, serum, can be taken from the donor and put into the recipient, especially where we want a small amount of the elements of the blood. In one interesting case where I happened to have a case of leukemia, and at the same time I had a case of pneumonia, in the worst form, I put them to bed side by side, and transfused from one bed to the other. It went very nicely.

Dr. Vaughan stated that he used it experimentally in rabbits; but he did not mention the fact that we took the blood out of the jugular vein and put it back into the ear vein of the same rabbit. In that way we washed the blood really of this particular rabbit. The rabbit was watched for a couple of days, and there was no bad results from the experiment.

I thought this instrument might be interesting for any physician who has not the means of blood transfusion. I do not care to rob any of the glory of the surgical technic from the surgeon, but I thought it might prove worth investigating.

DR. GEORGE, ANN ARBOR.

I have been greatly interested in this subject of transfusion of blood. I have been doing some experimental work at the University, together with Dr. Polk, and we have tried various means of anastamosis, and find the most practical thing would be the glass tube. We find in any of the methods there is danger of clotting. I also found that if transfusion is carried on by joining the artery of the donor and the recipient that the blood flows through without clotting, and under the pressure of the heart, that in about five minutes' time you will deplete the entire blood of the donor and he will die of a hemorrhage; showing that a transfusion which is carried on without clotting, and it

is necessary to contnue it beyond that period of five or ten minutes, that there certainly must be some clot in the canula or somewhere, interfering with the flow. The operation itself is quite a difficult one to perform.

There was another experiment that was interesting. I had two dogs, one weighing about forty-eight pounds, and the second one weighing twenty pounds; using the larger dog as the donor, and the smaller as the recipient. We opened the jugular vein of the recipient, and raised the blood pressure of the recipient from 62 millimeters to 141. After that was done, or very soon thereafter, the donor died; he was entirely depleted of blood. Then I took another dog about the same size as the recipient, and joined him with the recipient and the second dog was bled into the recipient, also; so that the recipient had the blood of two dogs. He then died as the result of the over-transfusion; thus showing that you can over transfuse a patient with blood. In this case the over-transfused dog showed marked congestion in all the mucous membranes. When we opened him up, all the chambers in the pleural cavity were filled with fluid, and all the chambers of the heart were filled with a fluid; and the organs, the liver and the lungs, were all over congested, showing the condition which is liable to be made. So that when transfusion is done clinically, one must watch the condition of the blood pressure of the recipient, as well as the donor, and must watch the recipient very closely.

I once had occasion to connect the radial artery of the donor with the vein of the recipient. This was in the case of a woman, following her confinement, and I might say that her confinements had been close together. She was a woman that had been doing all her work, so that she had scarcely any blood before the confinement came on, and as a result she had some hemorrhage, and following that I tried various stimulants to revive her, with no effect—used salines without any result. I soon saw that something would have to be done to save her life. She had already had symptoms of respiratory paralysis. There was no blood pressure in the arms and lungs, and only a slight pulsation evident. We connected her with her husband, using a closed needle for this purpose, and her vessels soon began to fill up; warmth was imparted to her system, and pulsation soon was noticed in the radials. and the patient made a satisfactory recovery. But the essential point was that there was no blood pressure in the recipient whatever. You must watch that. and if you do not do that, you are liable to have a collapse of the donor.

In regard to this instrument, the only point of criticism that I have is the danger of clotting. For instance, it has been found that in cases of that kind you ought to transfuse about 250 c.c. of blood. If you can transfuse 250 c.c. of blood in proper time to prevent the clotting, it is a very practical device, because it does away with the technic—the special technic required in making the anastomosis between the vessels of the donor and the recipient—the technic which takes a good deal of experimental work to become perfectly familiar with. So that if one can transfuse sufficient blood in that way by repeating the injections I should think it would become very practical for any physican to use. That is the point that I am debating, whether you can repeat the injections often enough to inject 250 c.c. of blood or more. If you can, it is a good method.

DR. ———

I believe the remarks of the last speaker are quite appropriate. To be efficient in this work it would seem that a remarkable blood pressure absorption should be made upon both the donor and the recipient.

It occurs to me from a physiological standpoint that in the majority of cases, where benefit is derived by the recipient, it would come in this way, from a plasma presented the recipient from the donor's blood, which of course becomes a lymph. I believe physiologically, each cell is nourished directly by lymph rather than by blood. I believe Starling, in his recent work, says that no cell in the body receives nutrition directly from the blood, but rather from the lymph. So the transfusion of fresh blood I believe owes its beneficial effect to the plasma in immediate contact with the lymph cells; so that it can be available for a lymph supply. The danger, as was indicated, by Dr. Vaughan, comes from the deprivation of the tissue of its nutrition.

This apparatus that has been shown us appeals to me as a very logical one, for the reason that you can determine the amount of blood used, so definitely; and you can determine the amount of pressure, as exercised in the changes. For those reasons it seems to me that it is the apparatus of choice.

DR. VAUGHAN

I will just answer the few questions that have been asked; with regard to transfusing 250 c.c. of blood Dr. Freund has transfused 150, and stopped then, not because there was any difficulty with the apparatus. He simply did not want to transfuse any more. When you do direct transfusion how much blood do you know that you transfuse, or how much you will need? The other point I tried to make is this: When you need serum, use serum; when you need red blood cells then transfuse, because you need the hemoglobin chiefly. It is not a matter of nourishment at all; it is a matter of the amount of oxygen supplied to the tissues, and it is a matter of quick death, or sudden death, if you supply enough to tide over this it will last several days, as you will see when you transfuse a case of pernicious anemia, that case is better for a week. The patient has the benefit of those red blood cells for at least six or seven days, and that is enough; in that time the patient has made enough new blood to be out of danger.

ILEUS *

A. I. LAWBAUGH, M.D.
CALUMET, MICH.

The term ileus is practically condemned by most surgeons, because it does not represent a condition or definite disease, but is a complexus of symptoms.

In general, ileus means the collection of symptoms produced when the passage of fecal matter and flatus through the bowel is completely interfered with. A condition which on auscultation with a stethoscope over the abdomen, one will find—as graphically stated by an English surgeon, "Silent as the grave." The arrest of the passage of bowel contents, faeces and flatus may be due to a great variety of conditions.

VARIETIES

There are three cardinal varieties—paralytic, dynamic and obstructive. The largest percentage being post operative, and due to ob-

* Read before the 19th Annual Meeting of the Upper Peninsular Medical Society held at Ishpeming Aug. 7, 1913.

struction by bands or adhesions. Other causes of this variety are intussusception, volvulus or some form of pressure causing obstruction and completely occluding the bowel lumen. The paralytic form is frequently due to some cause without the abdomen. The dynamic is a condition in which there is a spasmodic condition which shuts off the lumen of the bowel, but the condition not being one of such complete occlusion as in the other forms. Complete intestinal obstruction is a most horrible disease, in which the suffering of the patient is excruciating. The four cardinal symptoms are abdominal pain, nausea and vomiting, distension and coprostasis. When all are present and well marked they indicate a grave condition and probably a rapidly fatal ending. They may be mild in character, but are danger signals which should not be mistaken and should be thoroughly investigated as to the cause and indication.

The most common variety and most frequently seen is after abdominal operations. This variety of ileus following a laparotomy is not infrequently ascribed to a functional neurosis, caused by some disturbance of the sympathetic system.

ETIOLOGY

In a paper read before the A. M. A. meeting at Atlantic City by Cannon and Murphy of Boston, they showed that by crushing the testicles of animals the flow of intestinal contents was very much slowed and they concluded that if the animals had not been etherized the effect would have been much more marked, even to the point of complete cessation of passage of faeces and flatus or complete obstruction. In cases where they severed the splanchnic nerves, and then crushed the testicles, there was practically no inhibition of intestinal activity, showing that this inhibition was conveyed to the stomach and intestines by the splanchnic nerves. Further experiments showed that exposure to the air, unusual cooling of the gut, likewise caused no noteworthy delay, but most striking effects were seen after handling the stomach and intestines.

Removal of these organs from the abdomen and even gentle handling in the air caused great retardation. Rougher handling, such as stripping the gut between the fingers gave rise to extreme sluggishness of the small intestines. Severing of the splanchnic and then handling did not change the inactivity nor increase it by destroying the pathway of the inhibitory impulse, the result being attributed to local disturbance. due to the handling and not due necessarily to reflex inhibition from the sympathetic system or its connections with the cord proper, but entirely explained by the disturbance of the local mechanism in the wall of the gut. From these experiments the cause of dynamic or paralytic ileus is due to disturbance of this local mechanism of the gut, in some way destroying the action of the bowel muscles, or the motor mechanism of the intestines.

Toxins independent of those generated by intra-abdominal lesions may cause ileus and distension as are found in pneumonia and more rarely in acute nephritis. By what channel these extra- and intra-abdominal toxins produce paralysis is not clear. It is remarkable how slight a degree of peritonitis will stop peristalsis, especially in the weak and anaemic.

Finney emphasizes the fact that ileus occurs in cases of advanced malignant disease coexistant with a slight peritonitis that would never disturb a healthy individual.

The ileus that follows a clean laparotomy where there is every reason to eliminate operative sepsis is probably due to peritoneal trauma, but even so it is by no means safe to exclude some degree of septic infection as an associate. There is great danger even in slight intra-abdominal operations in acute cases, before immunity to toxins has been established, and may arouse an intense peritonitis and a consequent ileus.

Mechanical or obstructive ileus is at least the cause of 75 per cent. of all cases of acute intestinal obstruction. Intestinal obstruction is practically always an acute condition, but the cause producing it may operate for some time before there is a marked crisis. As Weid tersely remarks, the question is not what the cause, nor where the obstruction is, but is there an obstruction? This statement is a forcible plea for diagnosis and prompt treatment. I must again emphasize the fact that obstruction is practically always an acute condition, but the cause producing it may be one of the many pathologic conditions.

For clinical study we may classify the several forms under the following heads:

1. Through congenital apertures.
2. Into normal peritoneal fossa.
3. Through mesenteric slits or diaphragmatic rents.
4. By bands, congenital or adventitious.
5. Peritoneal adhesions.
6. Vitelline remains.
7. About viscera normally attached.
8. Kinks and knots.
9. Volvulus.
10. Intussusception.

SYMPTOMATOLOGY.

I will not take up your time in defining or explaining the various causes separately for they all practically produce the same train of symptoms and are equally productive of dire result, unless relieved by proper prompt treatment.

There are certain classical symptoms of in-

testinal obstruction which develop to a greater or less degree at some time in the progress of every case, regardless of the cause, and to these we must attach the greatest significance. Oser of Vienna calls attention to five important symptoms occurring in the following order:

1st—Fluctuation of the intestine above the seat of stricture, due to accumulated fluid.
If the case is not seen very early this may not be marked as the following meteorism will not allow it to be demonstrated.
2nd—Increased and altered peristalsis. This symptom is, however, more marked in chronic cases.
3rd—Vomiting is usually a symptom of much value and significance, but not always present.
4th—Meteorism. And lastly, but not least
5th—Pain.

There is also one other symptom which he does not enumerate, but is one of much significance, and that is absolute constipation, absence of stools and flatus.

PAIN is one of the most common symptoms of intestinal obstruction. It is colicky in nature and is produced and corresponds in time with the violent peristalsis, and when the obstruction is complete the pain is not so periodic, but more constant in its nature. Lenander asserts that some of the pain is due to pressure on the peritoneum by the distended gut. The pain location with tenderness is a fair criterion as to the localization of the obstruction. When the obstruction is in the small intestine the pain is much more intense than in the large bowel for the peristalsis is much more active in the former.

Pressure does not aggravate the pain, on the contrary firm diffuse pressure relieves it. (Senn).

VOMITING is nearly always an early and well-marked symptom of obstruction from all causes, and appears earlier and proves more persistent the nearer the obstruction is located to the stomach and the quicker the occlusion has taken place, by reason of the sudden interruption of normal peristalsis. It usually begins by the eruction of gas and hiccough, and is one of the most distressing of all the symptoms. The matters first vomited are the contents of the stomach, then bile, then brownish or greenish material. This continues with retching and straining until sooner or later the *vomitus* becomes faecal. This feculent matter may be at times the contents of the colon, but is most generally the decomposed contents of the jejunum and ileum. If the obstruction is high up it practically never becomes stercoraceous. "Too much consequence must not be attached to this character of *vomitus;* it should not be relied on for diagnosis as it is frequently absent or occurs late." (Greig-Smith).

COLLAPSE: Vital depression inevitably occurs in every case of intestinal obstruction. It closely resembles shock, as so plainly manifested in the anxious expression, the sunken, pinched features, the cold, livid extremities, great restlessness, hurried thoracic respiration, almost imperceptible pulse and subnormal temperature, cold and clammy skin. The greater the amount of bowel involved in the constriction, the greater the supply of poison produced in the strangulated part to be absorbed, the greater the shock. This statement is, however, only relatively true, as we sometimes see a profound shock in hernias where only a small knuckle of intestine is involved.

CONSTIPATION. A conspicuous feature in the clinical picture of obstruction is the absence of stools and flatus. The arrest is due to the occlusion of the lumen of the gut at the seat of obstruction, and of paresis of the intestine below this point. In some cases flatus passes after other marked symptoms are present, as in some cases of intussusception. Occasionally the use of an enema may succeed in causing the discharge of some faeces and flatus, but this comes from the gut below the seat of the obstruction.

METORISM OR TYMPANITIS. It has been shown by several authorities that this condition is the result of disturbance of circulation, causing paralysis and decomposition of the intestinal contents above the obstruction. The tympanitis is caused exclusively by distension of that part of the intestinal canal above the obstruction. The *ingesta* is not an important factor in producing the distension. Cannon and Murphy have clearly shown that the contents of a strangulated loop consists largely of a transudation from the mucous membrane due to the stagnant circulation.

The greatest importance must be attached to the foregoing five symptoms: Pain, Vomiting, Collapse, Meteorism and Constipation, yet there are other features present which also enter into the diagnosis. The pulse is frequent, soft and thready. The temperature is of distinct diagnostic value, it being low—often subnormal, and rarely rising above 100° even after perforation and peritonitis have developed. The respiration is distinctly thoracic in character and especially so after the development of tympanitis. The countenance has an anxious, oppressed expression. *Great thirst* is a marked symptom. The urine is scanty and in some cases total suppression takes place. Rigidity of the abdominal muscles indicate peritonitis, and is never a prominent symptom in intestinal obstruction uncomplicated by peritonitis. The abdominal walls may be tense, but never the rigidity of peritoneal involvment, which, if it occurs at all, is a late manifestation.. Even the most expert surgeons after resorting to all known diagnostic resources, not infrequently fail in making a correct ante-operation diagnosis. Senn, quoting Obaliniski,

proposed abdominal section in thirty-eight (38) cases of intestinal obstruction from almost every possible cause. In only about fifty per cent of the diagnosis, both as to location and character, was he proved to be correct. He is of the opinion, in which every surgeon fully coincides, that even by a resort to all the modern diagnostic aids, an accurate diagnosis is possible only in about one-third of the total number of cases. In the remaining number, when symptoms point to obstruction, (with our present means of diagnosis we are unable to make a positive diagnosis) he is in favor of an early exploratory incision through the median line, an opinion sanctioned by most surgeons of the present day.

PATHOLOGY

I have previously stated that more than 75 per cent of all cases of ileus are of the mechanical or obstructive form and that the large majority follow laparotomy for various intra-abdominal conditions. It is still practically an unsolved problem as to the cause of this most serious condition, and for which nothing definite as to prevention has been elucidated. True, Murphy and Cannon in their experiments have shown that prolonged manipulation has very harmful effects, but this can only be so in a certain number of cases, for the same result has obtained after the most rigid and careful manipulation. The question as to what is the exact factor in producing the severe systemic intoxication has also not been solved, even after most searching investigation and animal experimentation. The "Intoxication theory" of Bouchard and many others does not entirely account for *all* and the fearful fate of the affected patient. The quintessence of this theory being, that as soon as the obstruction occurs and the propulsion of intestinal contents is interfered with, excessively large quantities of bacterial decomposition products are formed, these products absorbed into the blood and there exert their toxic effect. Usually the scape-goat *bacterium coli commune* is saddled with being the cause. As the intoxication theory, however, can hardly be made to explain the great collapse in some cases of acute intestinal obstruction, one of "nervous reflex" has been advanced, especially in those where profound collapse occurs in from six to twenty-four hours after the onset of occlusion, for the production and absorption of toxines is a matter of time.

In An Experimental Study of Acute Intestinal Obstruction, by Hartwell and Hognet they state this:

"Intestinal obstruction in man, if unrelieved, speedily causes death. The fatal outcome is too rapid to be the result of starvation, and three general theories have been advanced to explain it: (1) A disorder of the nervous mechanism controlling the cardiac and vasomotor systems, (2) A bacterial infection of the organism by the passage outward of bacteria from the intestinal lumen, (3) An intoxication from poisonous substances imprisoned in the intestine orally to the obstruction." The advocates of these various theories have done a vast amount of experimentation to uphold one or the other, but up to the present time the question remains unsettled. After a long series of experiments they came to the conclusion that the "intoxication theory" has the most experimental evidence to support it, and no experiments have proved the absence of a toxomia.

Murphy and Vincent, previously quoted, found the material from the obstructed or strangulated intestine very poisonous when injected into the peritoneal cavity. They, therefore, concluded that living bacteria are the important factors, for if this material was boiled or filtered it had lost its poisonous properties. There may be other poisons, but probably never present in sufficient quantity to produce death.

Hartwell and Hognet in searching for the source of the poison accepted three possibilities: (1) Foodstuffs or substance derived from them; (2) True bacterial toxins; (3) Secretory substances from the alimentary tract and digestive glands or their derivatives. They also found that a high obstruction produces much more severe symptoms, and is more rapidly fatal than a low obstruction, yet bacteria are much more numerous in the lower bowel than in the upper. As is well known, one of the functions of the intestinal mucous membrane is to alter the substances which pass through it into the blood so that they are not toxic to the organism. They found the obstructed loops always markedly distended and the walls severely damaged by ulceration or by destruction of the *mucosa*, and sometimes even to gangrene. They resemble the lesions produced when the gastric juice, unneutralized by the duodenal contents is emptied into the jejunum. From these findings they concluded that there is a destructive agent which seriously affects the *mucosa* of the intestinal wall and thus allows the bacteria to pass through. Therefore, change in the intestinal *mucosa* is to their minds the solution of the cause of death in intestinal obstruction, and that this change is due to the irritating influence of the retained digestive juices, and the mechanical damage due to the stretching of the intestinal wall. Abnormal absorption is the essential factor. The following is a summary of the findings of their work:

1. A high intestinal obstruction, that is, 10 to 30 c.m. from the pylorus, in dogs may not produce death for ten days, provided the gut wall is not

damaged. If it is damaged the average life is only half as long.

2. In the kidney and liver there are found cellular changes which are the same as those found in many toxic diseases. The intestinal *mucosa* is found damaged to such an extent that it may readily be conceived that it has been deprived of its natural defense against the passage of toxic substances unaltered through it.

3. Bacterial invasion of the blood does not necessarily occur.

4. Dogs deprived of food for 48 to 72 hours may die as early as those fed 10 to 20 hours before the obstruction is produced. Decomposition of foodstuffs is not therefore an essential element in causing death.

5. The action of the gastric juice, bile, pancreatic juice and duodenal secretions are not a requisite in producing the symptoms and pathological changes seen in intestinal obstruction.

6. The above findings indicate that death from internal obstruction in dogs results from the presence of toxic substances in the circulating blood which produces fatal lesions in the kidney, liver and other tissues. The essential factor which admits these substances into the blood is an injury to the lining cells of the intestines caused by the irritating action of the stagnated contents, together, possibly, with the mechanical damage due to stretching. The poisons themselves may arise from the secretory activity of the various digestive glands, or from bacterial activity. They may be the same as those found in the normal tract, or they may be substances newly formed under the conditions of stagnation. Whatever their source they are innocuous so long as the *mucosa* remains noraml.

It is very interesting, however, that in later experiments these same investigators have, in addition to the conclusions before given, made the following summary:

Dogs with complete obstruction in the lower duodenum, if untreated, will live only a few days—three to ten. During this time they vomit large quantities. The urine shows marked abnormalities when compared with the urine of a dog in simple starvation.

If a quantity of normal saline solution, slightly in excess of the total loss of water in the urine and *vomitus* be given daily in the form of hypodermoclysis, the dogs promptly return to the condition of a dog undergoing simple starvation. Dogs so treated have lived in excellent health for periods of three weeks or more, showing at the end of that time every indication that they would live much longer if the treatment were continued. The important element, therefore, in the development of the symptoms seen in intestinal obstruction in dogs is the loss of water due to vomiting.

The symptoms of intoxication are those resulting from tissue disintegration following this loss. Replacement of the water cures the symptoms and prevents death over astonishingly long periods. If, however, strangulation complicates obstruction the above facts do not seem to hold true. The experimentors in forming their conclusions only obstructed the lumen and did not interfere with the circulation; hence if any clinical application was to be made it must always be borne in mind that in man there is nearly always a strangulation combined with the obstruction, nor would this application to the treatment in any way lessen the necessity of mechanically relieving the obstruction.

In a still more recent report of some animal experimentation in the Hunterian Laboratory of Johns Hopkins Medical School on Intestinal Obstruction—A Study of the Toxic Factors, is given a very interesting and profitable series of tests. I will only give you a summary of their conclusions, as it would take too much time to give even a resume of their work.

High loop obstruction in dogs causes very rapid death—24 to 60 hours as a rule, even when the loop contains no food material, nor secretion from the stomach, liver or pancreas. Low loop (ileum) of similar nature are much less rapidly fatal.

These experimentators washed out the occluded section of the bowel so as to be sure that no food or any of the above mentioned secretions were present, and yet the same toxic element became manifest.

Surgical drainage of this loop will save the dog's life. Excision of this duodenal loop does not necessarily disturb the animal's health.

The material obtained from obstructed loops is toxic when injected into dogs, the high loop being much more toxic. This material causes profound splanchnic paralysis with extreme congestion of all this area, particularly the small intestine.

The toxic material introduced into normal animals produces many changes similar to those found in the animals with closed duodenal loops: namely low blood pressure and temperature, excretion of large amounts of fluid into the intestinal canal and fatal shock.

This toxic substance given in a single injection causes a reaction in the dog which is almost identical with the picture of anaphylaxis in this animal.

These observers proved this by sensitizing a healthy dog to human serum, then after an interval of one month a large amount of human serum (140 c.c.) was injected. The blood pressure promptly fell and remained low until death two hours later. The temperature fell rapidly. The blood clotted very slowly. There was an escape of semi-fluid stools during the last hour of life. On autopsy the intestinal tract presented a striking similarity to the picture of poisoning by duodenal loop fluid, suggesting a possible relationship between this substance elaborated in the closed intestinal loops and the substance which is set free in the dog's body following the second injection of a foreign proteid. The toxic material is not injured by heating at 60° C. for any length of

time, centrifuging and filtering in any manner. It is not impaired by prolonged autolysis, by pancreatic digestion and bacterial fermentation. Hydrolysis with dilute acids probably destroys it. No such substance may be obtained by autolysis, digestion or putrefaction of the normal intestinal *mucosa*.

Injections of sub-lethal doses of this toxic material will protect against subsequent large doses and probably prolong life after a closed duodenal loop has been established.

I have gone into a somewhat lengthy detail of these various animal experiments for they have a very important bearing on the proper operative treatment of this most serious intra-abdominal lesion. I would especially call attention to the last series by the experimentors of the Hunterian Laboratory as to the effect of surgical drainage of the affected loop.

TREATMENT

In spite of the advances that have been made in methods and technic, the mortality after operative interference in acute intestinal obstruction is still a very high one. Banzi has recently collected 758 cases from literature with a mortality of fifty-seven per cent. Da Costa gives from sixty to seventy-five per cent. Even if the very advanced cases—those *in extremis*—are excluded, the mortality will still be found to be a very high one. If the diagnosis were made earlier, operations would be made earlier and the mortality would be much less. So it behooves every medical man to make every effort for an early diagnosis and the surgeon to endeavor by greater simplicity in manipulation to have less operative failures.

In a relatively small number of cases the general condition is a very good one so that the radical operation is justified, that is to go into the abdomen and relieve the cause of the obstruction at one procedure. The operative indications in acute obstruction of the bowels are two-fold, the relief of the obstruction and the withdrawal from the body rapidly, of the restrained and poisonous intestinal contents.

In far the greater number of cases, however, the condition is one of greater severity, the patient being desperately ill from shock and collapse from the absorption of the before mentioned poisonous substances, which have a baneful influence not only directly upon the intestinal muscle, but also upon the nervous system and upon the cardiac muscle. The distension of the intestine with gas adds its deleterious effect, not only by pressing upwards against the diaphram, interfering with respiration and heart action, but also by disturbing the circulation of blood in the bowel wall.

Now in these grave cases, and, as before stated, they constitute by far the larger number coming to the surgeon for operative relief, what plan shall be pursued to obtain the best results, i. e., to relieve the patient's dangerous condition due to retained poisons and distension of the bowels? The technic which is recommended by Moynihan and endorsed by practically all surgeons is more conservative than the one recommended by the great Treves, who strongly advised radical procedures. The technic as taught by Moynihan is to open the abdomen; the first distended coil of intestinal is seized and sutured to the peritoneum about the abdominal incision, every care being taken that the stitches do not penetrate the mucous membrane of the gut. A purse string suture is now inserted so as to inclose an area of the exposed gut. The edges of the abdominal incision are carefully protected by gauze packing, after which an incision is made into the inclosed purse string suture area, and the gas and other intestinal contents allowed to flow out. A Paul's glass tube is passed into the gut and the purse string suture is tied. Some operators use instead of a Paul's tube, a rubber drainage tube which is sutured into the gut as in the Kader gastrostomy operation.

Francis T. Stewart has devised a method by which the bowel can be drained without any risk of infection of the peritoneal cavity which always exists in the case if the purse string suture is used. Stewart places a clamp at either extremity of the loop of bowel and surrounds it with gauze. One half of a small Murphy button is inserted into the empty loop through a small incision. The other half of the button is squeezed into a rubber tube, the diameter of which is somewhat smaller than the flange of the button. The two parts of the button are now clamped and the clamps removed from the loop of the bowel. The intestine is then sutured to the peritoneum as before mentioned. The end of the tube can be placed in some receptacle to prevent soiling. By this simple operation of enterostomy, it is possible to tide over the acute fatal symptoms and thus save life.

When the patient has rallied from his deplorable condition, the cause of obstruction can be searched for and removed without so much risk as when done without a previous enterostomy. A great lessening of mortality in the treatment of intestinal obstruction will be sure to follow an increased frequency of operation in two stages.

The late Professor N. Senn, who no doubt was the greatest authority on intestinal surgery, emphasizes in the following words the value of enterostomy:

"It is the duty of every practitioner to perform it in all cases in which, through tympanitis, or the prostrated condition of the patient, laparotomy is out of the question. Enterostomy is a life-saving effort, and as such no

patient should be allowed to die without giving him the possible benefit of this operation."

Against the operation of enterostomy alone, a number of arguments have been advanced:

1. The cause of obstruction remains unrelieved.

2. There may be a gangrenous process present, or gangrene may set in unless the obstruction is relieved.

3. After enterostomy, a fecal fistula may remain which may require a second operation for its closure

As to the first, if nothing but the enterostomy is done it is true the obstruction remains unrelieved and a further operation will in all probability be required.

The dangers of an operation for obstruction when there are no acute symptoms are, however, so much less, and the technical difficulties are also so much less, that the division of the operation into two stages is justifiable and it is receiving the approval of many surgeons.

What happens in a laparotomy under the conditions of acute obstruction? It must be done *hurriedly;* as soon as the abdomen is opened a large mass of distended intestines present, and even with the greatest of care some of them will protrude, making the manipulation tedious and difficult, and in spite of all possible gentleness the peritoneal covering of the bowel is apt to be torn. Very often to find the obstruction it will be necessary to partly *eviscerate,* and this causes enormous shock and the replacement is very difficult unless some of the coils are emptied by aspiration and it is much more difficult to prevent soiling than in the plan previously mentioned; in such cases we have the high mortality. In a few cases the operation of enterostomy alone may relieve the obstruction, as in the case of bands where the relief of the distension may allow the intestine to slip out under the band.

2. It has been advanced as an argument against the operation of enterostomy, that if the search for the obstruction is not done, gangrenous intestine may be left in the abdomen, or unless the constriction is relieved a constricted part of the bowel may become gangrenous. The frequency of gangrene is not, however. as great as is commonly believed.

In Mt. Sinai Hospital the records show that excluding cases of volvulus and intussusception, which are not very frequent causes of obstruction, gangrene occurs in about five per cent. of patients with acute obstruction. If gangrenous gut is found at the time of the enterostomy, or laparotomy, what is to be done? We must *not* be tempted to do immediate resection, for in these cases the mortality is extremely large. The better way is to follow the plan of Mikulicz. The gangrenous loop is brought outside the abdomen, fixed parallel to the wound, and the enterostomy performed above it.

3. Another objection that has been urged against the opening and drainage is that a fecal fistula will remain which may require a dangerous operation for its closure. If the operation is done as before described a fistula will remain in only a small proportion of cases, unless some complication, such as sloughing has taken place. There must not be too much delay in performing the second operation, for if the drainage is from the small intestine it may cause starvation. Twenty-four to forty-eight hours is usually as long as proper to wait.

In conclusion I will say from my own experience, which, however, has not been large, and also more from the experience of surgeons of large experience, that the best working plan for the operative treatment of acute obstruction is as follows:

A. The patient in good condition—here a more or less prolonged search for the obstruction is allowable.

B. The patient in very poor condition—Opening and drainage of the most distended loop of intestine. If possible the incision should be made small and over the site of the obstruction if this can be located.

C. The patient in fair condition—Relief of the obstruction if the same can be found at once when the abdomen is opened, and if the relief can be accomplished without complicated manipulations. Otherwise open and drain and have a second operation at a later period.

CONCLUSIONS

1. Operative interference for acute intestinal obstruction should very often be divided into two stages.

2. Enterostomy and drainage should be the operation of choice, not only in the desperate cases, but also in many patients whose condition is still a fair one.

3. Prolonged search for the obstruction and its relief should, in all patients excepting those in very good condition, be delayed until the acute symptoms have been relieved by the opening and drainage of the bowel.

4. The danger of leaving behind gangrenous intestines is a small one, it is smaller than the danger from prolonged manipulations.

5. When gangrenous intestine is present it is preferable to bring it outside of the abdomen and deal with it later; the obstructive symptoms being meanwhile relieved by enterostomy.

6. Enterostomy, thus done, is not an "extreme, irrational and blindly advised" operation, but one that embodies a distinct therapeutic principle, alleviation of acute symptoms as the first step in the relief of a pathological condition.

7. The operation of enterostomy may

permanently relieve acute intestinal obstruction.

8. Fecal fistula will remain in only a small proportion of the cases in which enterostomy has been done, if the opening and drainage is made by the Kader principle, purse-string suture and rubber tube.

Post-operative obstruction coming on soon after a surgical operation is often not recognized for a time, and the surgeon will be in doubt as to whether he is dealing with peritonitis or intestinal paresis that simulate acute obstruction.

Always bear in mind the cardinal symptoms as before given.

When in doubt, the stomach can be washed out, salines in small doses frequently repeated, a few doses of atropine or physostagmine sulph. and stimulating enemas. If these measures are not quickly followed by the passage of flatus or feces, do not delay or wait for the advent of the more serious symptoms. Open the abdomen and do what is necessary as far as the condition of the patient will allow.

I was much surprised to hear at a discussion of a paper read before the Gynaegological Section of our State Society on post operative acute intestinal obstruction that so many practitioners advised and practised the use of various medical measures and so rarely surgical methods, except in the most extreme cases.

FEVER: WHAT IT IS, AND ITS SIGNIFICANCE AS A SYMPTOM. *

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Fever has been known and recognized from the remotest antiquity. Its presence was estimated by the sense of touch and by the appearance of the hectic flush. The amount of fever was, up to the middle of last century, estimated by the acceleration of the pulse. Fever thermometers came into use within the memory of men still living. While elevation of body temperature is associated with fever, it is not always a true indication, inasmuch as we have slight variations in temperature in perfectly healthy individuals. Thirst, weakness, *malaise* anorexia and certain changes in the character of the urine are usually concommitant with fever.

It is a fact, borne out in clinical experience, that no matter the disease condition producing rise in temperature, the fever itself is the same. It may follow a chill; it may be described by such terms as "remittant," "intermittent," "continuous," as ending by "crisis" or by "lysis." So uniform is its manifestation that it would seem characteristic of the bodily organism rather than of disease. In fact, almost everything that affects the animal body is followed by reaction of greater or less moment. Nor is the evolution of heat confined to the higher animals. It is common to all living things; it is manifest in the germination of certain grains; the atmosphere of a bee-hive is said to be several degrees higher than the atmosphere surrounding. Heat is derived from chemical changes produced in and by living cells, whether animal or vegetable.

TEMPERATURE VARIATIONS

In certain classes of animals, provision is made for the regulation of temperature so that in a state of health it is fairly uniform, regardless of the surrounding medium. Particularly true is this of mammals and birds. The temperature is generally higher in birds than in mammals. Man, with a temperature as high as the normal in birds (102° to 104° F.) would be very ill. Other animals, including perhaps the majority of marine or acquatic species, have not this mechanism for heat regulation, and are known as cold-blooded or *poikilothermic.* In the former class the presence of sweat glands aids in the dissipation of heat, while loss of heat is prevented in part by thick layers of non-conducting subcutaneous fat, by fur, by feathers, and in the case of man, by clothes. Temperature standards, even among so-called warm-blooded animals, vary. In birds, for instance, there is a marked fall of temperature at night, the variation amounting to as much as 3° Fahrenheit. Even in healthy human beings there is a fluctuation of 2.7° Fahrenheit. The greatest temperature being seen in the afternoon; the lowest in the early morning hours. The cause of these variations is primarily the variation in the intensity of metabolism. Exposure to heat or cold, unless protracted, does not materially alter the temperature of the normal body. To immerse the body in water at a temperature of 104° F. will cause a rise of temperature, inasmuch as the heat of the water interferes with the dissipation of animal heat.

HEAT MECHANISM OF CHILDHOOD

In healthy infants, according to Holt, the temperature by rectum varies from 98° to 99.5° F. and an occasional range of 97.5° to 100.5° has been noted. The center for heat regulation acts only imperfectly in young children, and it is easily disturbed by slight causes. The sustained regulation of temperature in childhood is not so well maintained as in adults. Sometimes this imperfectly functionating heat regulation persists into adult life, and may explain some of the anomalous temperatures which are sometimes met with in adult patients.

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The temperature in childhood is, as a rule, higher from corresponding causes than that of adults. We may have in children a very high temperature which is not serious, and for which no satisfactory explanation can be given. It is the continuous high temperature of childhood which is significant.

The control of the heat regulation mechanism is located, according to Tigerstedt, in the brain. We do not know for a certainty in what portion of the brain this thermo-regulatory center is situated, though puncture of the anterior lobe of the *corpus striatum* has been productive of elevation of temperature. The way in which it acts is not known. We do not possess any definite proof of the existence of any special nerves which preside over the production of heat. The means for heat dissipation is under the control of the nervous system. The vaso-motor nerves control the calibre of the cutaneous blood vessels. The secretion of sweat is a very effective means of keeping the body cool. In the dog, the exhalation and evaporation of water from the lungs accomplish practically the same result as the evaporation of the secretion of the sweat glands. The panting of a dog after exertion is in reality a cooling process.

HOW THE TEMPERATURE OF THE BODY IS ELEVATED

The production of heat may increase while heat loss remains constant, or heat production remain constant while the heat loss is diminished. According to Liebermiester, fever depends upon an adjustment of temperature regulation to a higher degree in which heat production and heat dissipation, the two factors whose product equals the body temperature, are supposed to behave in an entirely different manner, depending upon the case, but with the result of an increased body temperature.

This theory is based upon the assumption of a special centre in the brain for the regulation of heat. Sahli opposes this view with the theory that the regulation of body temperature is a highly complicated process which may be influenced and disturbed by any of the organs, but chiefly by variations in the distribution of the blood. "The internal organs are damaged by some toxic substance and there result according to physiologic laws a vascular dilation and an increase in the local circulation, in consequence of which a greater portion of the blood is in the internal organs, while the skin which serves for heat dissipation, has less than the usual supply." This means diminished heat dissipation or a heat stasis; or, as Sahli maintains, the idea that fever is due to diminished heat dissipation seems to be the simplest one and one firmly supported by physiologic facts.

A disproportion between heat production and heat loss in favor of the former, will eventually lead to an accumulation of heat and a consequent pyrexia. The concensus of opinion among such men as Krehl and Matthes, is that fever is a distinct increase in heat production, an increase rated from twenty-five to fifty per cent. Several observers, notably Staehelin, have shown that these percentages in heat production are sometimes exceeded by the amount of heat produced in the body after the absorption of a full meal; the maximum energy production occurring after a meal of carbohydrate and protein. Muscular effort is accompanied by an even greater percentage of heat production, and all without very marked elevation of temperature. The normal differs from the febrile person in being in possession of all the means for the dissipation of heat. In fever the dissipation of heat is relatively restricted.

SOURCES OF HEAT

An interesting phenomenon occurs in the initial stage where fever is ushered in by a chill. Every effort is put forth by the body to prevent the escape of heat. The clinical picture is familiar: the livid skin, blue and cold, due to the contraction of the cutaneous vessels; the shiver, the disposition of the patient to load himself with bedclothes. Internally heat production is increased, according to Liebermister in the chill of a malaria attack as much as 147 per cent. The great increase in heat production is attributed largely to muscular contraction. Though every tissue in the body is concerned to a greater or less extent in the production of heat; the cross-striated muscles are commonly regarded as its great source. They constitute over 40 per cent. of the entire weight of the body; if we leave out the skeleton, over 50 per cent. Next in importance as sources of heat are the glands of the body. Some ascribe heat production to the combustion of carbohydrates in the liver. If, however, the cord be severed, or reflex play of impulses on the muscles be abolished by anesthesia, the animal will react to all intents and purposes like a cold-blooded animal. Starling states: "The accurate balance between heat production and heat loss which is responsible for the nearly constant temperature of man, indicates the active co-operation of the central nervous system in every step of the process. Whether this function of temperature regulation can be specially located at any part of the central nervous system, so that it would be possible to speak of the heat centre in the same way as we speak of the respiratory or vaso-motor centre, is doubtful." The centres for heat loss, those at least which are concerned in the regulation of the blood supply to the skin and of

the secretion of sweat, are located in the medulla.

During the height of fever the disproportion between heat production and heat loss is not so marked. The heat loss, however, is always somewhat less than heat production. According to Krehl and Matthes, the special cause of fever does not of necessity determine the intensity of heat production. When a patient is overcome by the intensity of an infection, there is a tendency for the temperature to fall, until at times it may become subnormal.

METABOLISM DURING FEVER

The chemical process underlying heat production may be stated in brief to be oxidation, the end products of which are carbon dioxid and water. According to various writers—notably Voit, Staehelin, MacCallum and Kraus—oxidation in fever in man is usually but not necessarily increased, and where above normal excess is not great. In a normal person, so long as he has sufficient energy producing food, the tissues are not subject to oxidation. Further, not even the circulating proteins are attacked, so long as there is a plentiful supply of carbohydrates and fats. Regarding a febrile person, the situation is different. Speck differentiates two kinds of protein in the body, viz.: The cell protein which is the living protein of the cell, and the circulating protein, which is absorbed from the food. The former resists decomposition, while the latter is easily oxidized and excreted as urea. The nitrogenous output in fever is increased above normal and above the amount that can be accounted for by the food. According to Senator, the nitrogenous excretion in fever is about double that found in the state of health. In the later stages of fever, nitrogenous excretion diminishes, but does not quite attain the normal.

In some febrile processes, notably in pneumonia, there is a distinct retention in the tissues of sodium chloride; the sodium chloride secretion in pneumonia is very much diminished until the crisis, when it is excreted in large amounts. Typhoid, on the other hand, shows no such constant retention of sodium chloride. Some observers have noted a similar retention of water during the febrile process to be followed by a more copious excretion during the period of defervescence.

FEBRILE PROCESS DEVELOPED FOR THE GOOD OF THE BODY

Fever is something which is characteristic of the body rather than of the disease. In it we have a reaction due to a variety of injurious influences acting upon the body. Fever is characterized by moderate increase in oxidation, which in time produces a moderate increase in heat production. Certain changes take place which bring about a disproportion between heat production and heat loss, with a consequent rise in body temperature. The disturbance in metabolism consists chiefly in destruction of the circulating proteins, and when the febrile process is prolonged, to a larger degree in the destruction of the cell or tissue proteins. In some febrile processes water and sodium chloride are retained in the tissues to be excreted when the fever had subsided. Instead of regarding fever as the effect of an injurious agent on a passive body, it should rather be regarded "in the light of an elaborate modification of chemical processes evolved in the course of centuries of development to answer some special purpose." It is a process developed for the good of the organism, accordingly we must look upon fever as essentially a protective reaction. Hence is to be seen the absurdity of attempting to cure fever, or to treat it as such. Perhaps the rise of body temperature is necessary for the production of immune substances. The writer, with this idea in view, has never given antipyretic drugs for their antipyretic effect. Where the patient seems uncomfortable from a hyper-thermia, the use of water both inside and out would seem the wiser course. Hydrotherapy is at least over a century old. James Currie, friend of Robert Burns, and editor of Burns' poems, wrote of the beneficial effects of both cold and warm water in fevers and diseases. Particularly will the tepid bath or sponge be found effective in controlling the high temperatures of childhood. Since 1861, the value of bathing in fevers has been especially emphasized, since its inauguration by Brand of Stettin. Among the good effects of water therapy are to be noted the influence upon the nervous system lessening delirium, and diminishing tremor; increased excretion of toxins by the kidneys; the tonic effect upon the circulation; the rise in blood pressure; when these are accomplished the reduction of temperature is a matter of secondary importance.

Then again, it would seem reasonable to seek the cause of hyper-thermia. High temperatures frequently come from food intoxications; especially is this apt to be so in infants, in which case a proper adjustment of the food will remedy the condition and take care of the fever. In an adult who is accustomed to a vegetarian diet, a change to animal protein will produce a disturbance in the function of heat regulation. To restore the function to normal demands correction of the cause of the disturbance. In perhaps the majority of fevers with which the clinician has to deal, the causative factor is infection, due to the presence and multiplication of bacteria in the animal organism. It is a fact that bodily temperature may be raised at will by injecting foreign protein

into the tissues.* Bacteria are composed of protein. Is it not suggestive that bacteria by means of their protein composition may have a great deal to do in the elevation of temperature?

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* For an interesting exposition of the subject Protein Fever, see page 373. Protein Split Products in Relation to Immunity and Disease, by Vaughan.

TUBERCULOUS PERITONITIS *.

REPORT OF A CASE—THREE CELIOTOMIES—TUBERCULIN—APPARENT RECOVERY

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It is not our intention to give an exhaustive treatise on this subject, but rather to mention some of the important considerations which we find emphasized in reviewing the literature of the past five or six years, with the report of a case, showing features of considerable interest.

Tuberculous peritonitis is comparatively common among children between six and twelve years of age, and in young adults, though exceptionally seen in old people. Females are attacked much more frequently than males, in fact about eighty per cent. of these cases occur in girls and women.

Certain patholigical conditions of the abdominal organs predispose to the development of the disease. Patients with cirrhosis of the liver often die of an acute tuberculous peritonitis. It is frequently seen in operations upon ovarian tumors. Many cases have followed trauma of the abdomen, and the condition is occasionally seen in hernial sacs. With one exception, that of diffuse general miliary tuberculosis, (infection through the blood stream), tuberculous peritonitis may be considered a secondary process. The atria of the infection are: (1) the female genitalia; (2) the alimentary tract; (3) the sub-peritoneal lymphatic glands. (Primary tuberculosis of liver, spleen or pancreas occurs very rarely but peritoneal infection may result from foci primary in these organs.)

Tubal tuberculosis is a more common source of peritoneal tuberculosis than any of the others. The origin of tuberculosis of the Fallopian tubes may be hematogenous (as it may be in the vas deferens or epididymis in the male). Probably the infection more commonly occurs through the uterus. The fimbrinated end of tube remains open if there is a pure tuberculous infection. This is the only type of tubal infection in which the tube retains its patency during the inflammatory process. In the other types of infection, or, in a mixed tuberculous infection, the tendency is toward early closure of the tube by agglutination to the surrounding structures.

CLINICAL COURSE

The clinical course in an open (tuberculous) salpingitis is very similar to that of recurrent appendicitis. After a period of relief, the patient will have an attack of pain, nausea and vomiting, local tenderness, elevation of temperature, and often a discernible effusion into peritoneal cavity. Local peritonitis may result from spread of infection through the open fimbrinated end, or through a perforation in the tube at the site of the tuberculous lesion. The resulting limited peritonitis usually rapidly circumscribes itself and undergoes repair. In a mixed tubal infection the fimbrinated end becomes sealed, and the *mucosal* tuberculosis spontaneously heals in a large percentage of cases. The great resistance of the peritoneum to tuberculosis accounts for the rapidity with which slight infections usually heal, for tuberculosis of the uterus and tubes, with a resulting local peritonitis, is a more frequent lesion than ordinarily supposed. (3)

In the more severe cases requiring surgical intervention, the removal of the tube with encapsulation of the stump end, results in a cure of the local condition, and the extensive peritonitis that has resulted from repeated leakage from the end of the tube entirely disappears.

Tuberculosis, primary in the endometrium of the uterus, may, through direct extension of the process through the uterine wall cause peritonitis; or, it may cause it indirectly—the infection reaching first the lymphatic glands—and on the breaking down of these, the peritonitis may first appear.

Primary ovarian tuberculosis is extremely rare. Ovarian involvment is almost always secondary to that of the tube, resulting in a tubo-ovarian tuberculosis.

As one would naturally expect, the appendix, caecum and ileum are frequent sites through which tubercle bacilli reach the peritoneum from the intestinal tract. Actual perforation rarely ever takes place even in extensive lesions of the *mucosa*.

Next to the Fallopian tubes the appendix is the most common channel through which tubercle bacilli reach the peritoneum, the in-

* Read before the Section on Surgery, 48th Annual Meeting M. S. M. S. at Flint, Sept 4-5, 1913.

fection reaching the peritoneum ofttimes without leaving any visible atria of invasion.

Occasionally tuberculous peritonitis results from a mesenteric or sub-peritoneal tuberculous adenitis. The bacilli pass from the intestinal *mucosa* to the sub-epithenal lymph space and thus reach the lymph gland. Caseation and liquifaction necrosis follow; the glands rupture into the free peritoneal cavity producing a general tuberculosis of the peritoneum.

Primary tuberculosis of mesenteric glands occurs usually in the ileo-caecal region. The condition is very rare (41 cases reported in the literature.) It may result in a slowly developing appendicitis, or a peritonitis, sometimes with adhesions of the bowel and obstruction.

The process may be primary in the peritoneum, but in at least two-thirds of the cases, the peritonitis is a secondary trouble.

The prostrate or the seminal vesicles may be the starting point.

The process is usually latent, though cases with an acute onset are not uncommon. Cases are not infrequently diagnosed salpingitis, appendicitis, cholecystitis, and even a few have been mistaken for strangulated hernia.

DIAGNOSIS

The diagnosis is usually not difficult. It is easier in the female than in the male. The thickened *leathery condition* of the Douglas pouch and the absence of tubal fixation are valuable aids in a differential diagnosis.

The doughy resistance of the abdomen and the doughy reaction of the abdominal skin after twisting are conditions often observed.

Ascites is frequent and the effusion is sometimes haemorrhagic. There is circumscribed flatness in the encapsulated cystic type.

Tympanites may be present in the acute cases due to loss of tone in the intestines, owing to the inflammatory infiltration. It may also occur in old cases when adhesion has taken place between the parietal and visceral peritoneal layers.

A tumor mass may be present due to rolling of the omentum into a firm mass—palpable as an elongated sausage shaped tumor. Or, the mass may consist of a sacculated exudation in which the effusion is confined by extensive adhesions. Great thickening of the intestinal walls and enlarged mesenteric glands may also form tumor-like masses especially in children. Obstipation or constipation is frequently complained of.

Fever, though marked in the acute cases, is usually slight in the chronic cases. Sub-normal and irregular temperatures are common.

TREATMENT

Since the remarkable ability of the peritoneum to undergo repair from tuberculosis has become recognized, the abdomen has not been opened as frequently as it formerly was.

A permanent drain between the abdominal cavity and subcutaneous tissue has been used with fair success.

Hofmann reports four cases in which he painted all visible peritoneal tubercules with 10 per cent. tincture of iodine. Some ascites and meteorism followed, but each case made a good recovery and was apparently cured. Ofttimes some irritant such as camphorated oil, iodine, iodoform, Venice turpentine, etc., are inserted to induce an inflammatory reaction and a leukocytosis in the cavity. In the catarrhal or cystic exudative type an opening is frequently made to relieve fluid tension.[1]

Folk has demonstrated exposure to the Roentgen rays as a powerfully effectual adjuvant to the operative treatment of peritoneal tuberculosis, doing much to enhance the benefit from a laparatomy.

Tuberculin properly administrated, takes first place as a medicinal agent. In the hands of many, including Dr. J. B. Murphy, it has seemed to accomplish wonders, and explains the latter's enthusiasm for its use.

It is hardly necessary to mention that the institution of good food, fresh air and forced rest, is just as important, in the treatment of these cases as it is in tuberculosis elsewhere in the body.

CONTRA-INDICATIONS FOR SURGICAL INTERVENTION

In the more severe stage where tuberculous deposits are circumscribed and walled off they should not, at a rule, be disturbed. The opening into encapsulated, cheesy, breaking down tissue, may result in fistulas or sinuses persisting for long periods of time.

In patients with marked objective findings in the lungs, surgical intervention is usually to be avoided.

The presence of fever is regarded by some (Kuttner of Paris and others) as a contra-indication for operative treatment. Kuttner reports that after three year intervals following laparatomy (tuberculous peritonitis in ileo-cecal region) twenty-five to fifty per cent. of patients with ascitic form are cured, and about one third as many with the form without effusion.

Effusion, however, is a variable symptom, which may vary greatly in a given case from time to time. It usually appears early—following the so-called irritation stage—marked by the appearance of tubercles. Effusion may persist throughout or it may disappear and later reappear in the advanced stage either as a free fluid or as encapsulated cysts.

INDICATIONS FOR SURGICAL INTERVENTION

Surgical procedure may be required to re-

lieve acute conditions such as obstruction in the fibrous forms.

Laparatomy is likewise indicated in the exudative type with marked ascites. Ofttimes the effusion either through position or amount causes great distress to patient as well as marked functional embarrassment from pressure on abdominal organs. The removal of the fluid is of the greatest benefit to the patient's comfort and marked improvement is frequently observed following such treatment.

Removal of the abdominal focus permits recuperation and checks metastasis. Laparatomy must not be regarded as a cure in itself, even in the form with effusion.

When medical means fail or appear to be of doubtful utility, surgical intervention is indicated.

To what is the beneficial effect of a laparatomy to be attributed? Van Wickel claimed, years ago, that the evacuation of a toxic principle accounted for favorable results following operation. There can be no doubt that the removal of any appreciable amount of toxic material, bacteria and their products, will be of benefit to the patient.

However the sudden removal of the fluid—whose anti-toxic power has been already neutralized, with the resulting new effusion of normal sensitized serum—is probably the chief beneficial factor.

To the objection that the anti-toxic serum should annihilate the bacilli in all the tuberculous foci, Veit makes the following answer:

"If fluid is walled off or the osmotic pressure is so that there is not a free and continuous interchange of the local serous collection with the body circulation—the neutralizing of the serum exposed to the infective organism may result." (3)

REPORT OF CASE

Mrs. B. H., 25 years, American. First admitted to Jackson City Hospital on Feb. 9, 1910.

Family History—One maternal aunt had pulmonary tuberculosis. Otherwise family history is unimportant.

Past History—Following measles at the age of 12, patient never regained health completely. Menstruation began at 13, has always been irregular. Sometimes has gone 3 to 11 months without menstruating, and then small amount.

Pneumonia at the age of 15. Ill for 3 weeks. Six months later developed pleurisy with effusion left side from which Dr. Robinson aspirated two quarts of serous fluid. Good recovery. Somewhat anemic. She married at the age of 20. Involuntary sterility during four years of married life. No leucorrhoea.

Present trouble began with an acute attack of appendicitis in January, 1910 (three years and eight months ago). Operation was advised but refused. She changed physicians at this time and the new attendant called her condition "Walking Typhoid." She rapidly became worse, and came to us because of severe attacks of pain in her right side, vomiting, general weakness, and loss of weight.

Physical Examination—Fairly well nourished, anemic young woman.
Lungs, Left—Normal.
Lungs, Right—Normal.
Heart, Liver, and Spleen—Normal.
Urine—Normal.
Hemoglobin—65%.
Temperature—100°, Pulse 90, Respiration 24.

Abdomen—Tenderness and rigidity low down on right side, palpable tumor in it lower quadrant, size of a large orange.

Diagnosis—Diagnosis of tuberculous peritonitis was made.

Operation—Feb 12, 1910. Median Incision. Cobweb adhesions throughout. Small amount straw colored free fluid. Messentery and parietal peritoneum moderately injected and studded with small miliary tubercles. Intestines badly adhered to each other and to omentum. A number of adhesions broken up and a few small pieces of omentum removed. A large firmly adhered mass found in right iliac region. Appendix, caecum, several inches of ileum, and right tube and ovary firmly adhered together. Left tube and ovary free with peritoneal surface dotted with tubercles. Labored and prolonged manipulation was deemed inadvisible, so abdomen was closed, without drainage. No attempt was made to remove appendix. Patient left hospital at end of three weeks. Recovery uneventful. Mass in right side gradually grew smaller and patient's general health improved greatly under rest and open air treatment.

Post Operative History—In July following patient began clerical work at Niagara Falls, Canada. A few days later she had an attack of vomiting, slight fever, and noticed a mass in right inguinal region.

The attending physician later wrote us that symptoms of bowel obstruction caused him to operate on the patient on July 12, 1910, (five months after first section). Evidently no definite point of obstruction was found for the doctor further wrote that: "Adhesions were found in every direction. Some of these were broken down, but owing to the condition of the patient it was considered wiser to leave her alone." A severe diarrhoea followed this operation and persisted for two weeks.

Patient returned to us in August. During the next six or seven months she improved slightly in health, but her condition continued to remain far from satisfactory. On Feb. 13, 1911, just a year after her first operation, we began giving her tuberculin and continued same until July 31, a period of 5½ months, giving in all 33 injections.

During this time she improved in a remarkable manner. The large mass in right side of abdomen gradually grew smaller, but never entirely disappeared, and she gained rapidly in weight.

However she continued to have attacks of pain and tenderness in the right side of abdomen which partly incapacitated her. We now felt that the primary abdominal focus which we had all along considered to be the appendix, could be removed. She consented to another operation.

Third Operation—On Aug. 10, 1911, about a year and a half after her first operation, and thirteen months after her second, we opened up the abdomen the third time. The abdomen presented a very different picture than it had on the previous occasions. The parietal and visceral peritoneum was free from tubercles and adhesions; and excepting a small mass of adhesions involving caecum and a few inches of ileum, the parts appeared entirely normal. There was no free fluid. Adhesions were broken up. Fibrous tissue surrounded the appendix throughout its length in such a way that it was re-

moved with a curette. The appendix was tuberculous throughout caseous in part. No other focus or extension of process could be found in mesenteric glands or elsewhere. The abdomen was closed without drainage. Both tubes and ovaries appeared normal.

Patient left hospital at the end of a week.

Future Course—On September 4, 1911, we began giving her tuberculin again, and continued same for two months. Improvement in weight and strength followed and at the present time, about two years since the last operation, the patient weighs several pounds more than she has ever weighed, and is the picture of health.

In looking back over the treatment of a case like this, it seems that one of the first questions to come to mind is, "Would the patient have recovered without the last surgical interference?" Of course we do not know. We feel, however, that the total removal of the only remaining tuberculous focus, which was easily accomplished, offered to the patient the best chance for recovery.

The concensus of opinion today favors conservative non-surgical treatment of early and very late cases. Such cases that fail to show improvement and in which the abdominal focus is small, well limited and removable in entirety are treated surgically, and with encouraging results.

Tuberculin is undoubtedly a valuable adjunct. It must be very carefully administered and the dosage for each individual determined from time to time.

This case is not reported with the idea of adding anything new, but rather to encourage continuous and persistent treatment in these cases, for we fear that too often they are considered hopeless when much might be accomplished.

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THE PRESENT STATUS OF SALVARSAN IN THE TREATMENT OF SYPHILIS. *

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Sufficient time has now elapsed since the advent of salvarsan to enable us to look back with a critical and analytical mind upon the cases treated with that drug during the past few years and ask ourselves, "Have we gained anything by the discovery and use of salvarsan and, if so, how much?"

The ideas held by the medical profession in general have been thoroughly upset by the recent discoveries in syphilis, namely, the Wassermann test, the discovery of the *treponema pallidum*, salvarsan and the luetin test. All these will not be discussed here except as they have to bear upon salvarsan. Is it at all strange that with the appearance of all these discoveries within a comparatively short time all the old traditions so fondly cherished for generations should be shattered? Re-inoculability has been proved; infection from tertiary lesions is no longer deemed even improbable; and by means of the Wassermann test mothers of syphilitic infants are found always infected, in spite of the absence of external symptoms of the disease.

Salvarsan is now too well known for description but neo-salvarsan is perhaps not so. It differs from salvarsan in being less toxic, easily soluble in cold water, forming a neutral solution and being much better adapted to intramuscular injections. On the other hand it is much less efficacious and for that reason is used less than it would be otherwise.

Oily suspensions of these drugs which were highly recommended by some have fallen into disuse, as absorption was slow, a necrotic area was always formed, necessitating incision in many cases, and they gave as much trouble, or ever more, than aqueous solutions.

Intramuscular or intravenous injections of aqueous solutions (neutral or slightly alkaline) are the methods of choice, neo-salvarsan being the more easily administered on account of ease of preparation and less local toxicity. Without regard to the method employed for preparation and administration of salvarsan or mercury, what advantages have we gained since using salvarsan?

It is hardly fair to draw such comparisons, as in former years we had no Wassermann test to tell us when to continue or discontinue mercurial treatment. Patients were treated for varying periods of time during the appearance of symptoms and then at intervals for three or four years if they would stay under observation that long. Many cases were undoubtedly cured, many became immune to the effect of mercury, while many were seemingly cured but would undoubtedly have shown a positive Wassermann if such could have been made.

The cases that had received mercury for long periods of time and had become immune to it were the cases in which salvarsan was first used and in most cases one or two injections produced a complete cure as evidenced by a persistent negative Wassermann. Since that time salvarsan and neo-salvarsan have been used in cases in all stages of the disease and the results

* Read before the Section on Medicine, 48th Annual Meeting Michigan State Medical Society, Flint, Sept. 4-5, 1913.

as shown by the Wassermann test have varied greatly.

In the majority of cases which had previously shown a positive reaction, this becomes negative within four weeks, depending upon the size of the dose. This is, of course, the ideal way for the drug to act, but if further treatment is not given, either more salvarsan or a course of mercury, the reaction will almost invariably become positive again. Some cases which had previously shown a negative reaction, later showed a positive following the injection of salvarsan. This phenomenon has been explained by some on the ground that the cases either were very early ones or that sufficient antibodies had not been generated previous to the injection and that endotoxins were liberated by the salvarsan.

In other cases salvarsan in repeated doses has been necessary to produce a negative reaction, even a change to mercury sometimes being necessary to cause this result.

From the foregoing it would appear that salvarsan will not always act the same, which statement is also borne out by the clinical manifestations, as in many cases several doses of neo-salvarsan have been required to cause a disappearance of lesions, this being far more marked with neo-salvarsan than with salvarsan. Lier[1], however, thinks neo-salvarsan is indicated in cases where mercury is not well borne, giving best results in primary and tertiary stages, but it gives its best results when used in combination with mercury, especially in metasyphilitic diseases of the nervous system. The choice of drug however, is a matter of individual preference and experience as some users claim results with either drug which others cannot obtain.

EFFECTS OF SALVARSAN

The effects of salvarsan vary directly according to the rate of absorption and elimination. Swift, of the Rockefeller Institute, New York, has recently done some exhaustive work in this line, showing the absorption and elimination rate with neo-salvarsan and salvarsan injected in the various ways. With intravenous injections the drug is thrown into the circulation at once and elimination is completed, principally through the kidneys, in three or four days. This carried out the idea of *"Therapia Sterilisans Magna,"* but since this has proved to be a fallacy, this method of administration does not take into consideration the fact that many *treponemata,* in their own or some transition form, do not come in contact with the drug and hence develop unhindered after its elimination.

Mac Donagh has recently published[2] his researches upon the subject of transition forms of the *treponemata* and his work would seem to explain some of the phases of syphilitic infection which had before been unexplained. He has examined thousands of sections of lymphatic glands, both syphilitic and non-syphilitic, and states that the organism makes a connective tissue cell its host. By budding it gives rise to several bodies which later become differentiated into male and female elements. The connective tissue cell becomes merely a sac, which bursts and frees the contained elements. Some of the elements are male and female which go through a complicated life cycle, while others are set free and at once seek connective tissue cells and start other cycles.

Certain forms take at least two weeks to develop and during the sexual life of the male and female elements, when they are intracellular, they are uninfluenced by salvarsan or mercury. This would explain the relapses following salvarsan or mercurial treatment and would seem to favor the prolonged continuous action of either drug. His work, however, has not yet been confirmed by other investigators.

Intramuscular injections of salvarsan and neo-salvarsan are slowly absorbed, each forming a necrotic area around the fluid injected, but neo-salvarsan is practically entirely absorbed in six weeks while from ten to fourteen per cent. of salvarsan remains after ten weeks. There is as much neo-salvarsan absorbed in the first week as there is in six weeks after salvarsan[3] (Swift). This method then, gives continuous action for six weeks, destroying any *treponemata* that may come in contact with the drug during that time.

Salvarsan is not always indicated, however, as many conditions of the organs preclude its use. Cases have recently been reported in which it would formerly have been contraindicated, but when used with caution had no ill effects. Oppenheim and Sabatie[4] (*LeMonde Medical*) relate a case of an insane woman, 75 years of age, having pulmonary tuberculosis, double cataract, and tertiary syphilis; the infection being at least fifty years old; the eruption of twenty years' duration. Complete recovery within three weeks followed the cautious administration of salvarsan, a result which could not have been obtained so rapidly with any other means.

It was at first stated that salvarsan should not be used in cerebral and spinal conditions, in cases with cardiac, circulatory or renal derangements or any profound systemic disturbance. This can be modified so that the drug can be given in many of these cases in which the lesions are produced by syphilis, beginning cautiously with small doses intramuscularly, or,

1. Wien.—Kl. Woch. 1913 XXVI. 410.
2. British Journal of Dermatology, January, 1913.
3. Jour. of Experimental Medicine, Jan. 1913. XVII No. 1.
4. LeMonde Medical, August, 1913.

as Ehrlich now advises, giving a preparatory course of mercury when possible. These cases frequently require a drug with great rapidity of action and if *treponemata* can be demonstrated in the spinal fluid, an intravenous injection may be necessary, as Ravaut states that this method is the only one in which arsenic is found in the spinal canal.

Salvarsan would therefore be indicated in all cases requiring rapidity of action or intensive treatment, provided no serious lesion exists which would absolutely preclude its use. Even in senile cases where rapid action is essential it may be used in very small repeated doses with no ill effects. It will probably come to be used in cases of so called para-syphilis even though it was originally recommended not to be used in those cases.

Since the discovery by Noguchi and Moore of the *treponema pallidum* in the brains of paretics, it would seem that the para-syphilitic diseases of the nervous system could more properly be termed strictly syphilitic, or, as has been suggested in *LeMonde Medical*[5], quaternary syphilis. Such being the case salvarsan cautiously used would be more likely to give the required rapidity of action than any other drug, but the cases must be carefully selected.

CONTRA-INDICATIONS

Even with its many advantages salvarsan has some serious drawbacks which always make its use uncertain and somewhat dangerous. The danger of optic atrophy is well known, also the danger of its use with a previously existing nephitis. Wechselmann[6] in a recent article in the Urologic and Cutaneous Review[6] states that a fatality following salvarsan is due to the fact that a nephritis existed previous to the injection and the damaged kidney could not properly excrete the drug.

With intravenous injections there is, of course, more danger than with the intramuscular and more fatalities have resulted, but the physician, as well as the patient, should always be safe-guarded by a competent physical examination of the patient before administering the drug. Rapidity of action and absence of pain are the greatest recommendations for the intravenous injection, but even those are often outweighed by other considerations.

The method of election in administering the drug, the choice of drug, whether neo-salvarsan or salvarsan, are matters for individual experience and selection and must be varied to suit the conditions presented and the patient's sensibilities.

Salvarsan has done more than any other one drug to cure syphilis, shorten the course of the disease and consequently the protracted treatment. With the aid of the Wassermann test to control treatment it should go far to prevent the cerebral and spinal symptoms which have previously proved so rebellious to treatment. There may be cases in which salvarsan will produce little effect, but a judiciously combined treatment of salvarsan and mercury, controlled every two months with a Wassermann test should give the highest percentage of cures.

In Finger's latest work he believes that many of the neuro-recurrences are due to salvarsan and not to syphilis[7]. This is a question which cannot be argued here, but in many cases the risk of causing some secondary nerve disturbance must be taken in order to cure some other phase of the disease. However, he advocates always a combined mercury and salvarsan treatment.

Therapia Sterilisans Magna with salvarsan or any other drug known at present is now a myth, but we should not overlook the fact that in salvarsan and neo-salvarsan Ehrlich has given us our most powerful single agent in the treatment of syphilis.

5. LeMonde Medical, August, 1913.

6. On the Pathogenesis of Salvarsan fatalities. Wilhelm Wechselmann XVII. No. 5, 6 and 7. (Urologic & Cutaneous Review) I. No. 3, July, 1913. The Present Status of the Salvarsan Therapy of Syphilis, p. 251. Wilhelm Wechselmann.

7. This statement is denied by Wechselmann, who claims that neuro recurrences are always due to syphilis alone.

ABSTRACT REPORT THE XVII INTERNATIONAL CONGRESS OF MEDICINE. DERMATOLOGICAL SECTION. *

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The XVII. International Congress held in London August last was without question a most successful meeting both scientifically and socially; the attendance being 7,500 registered, and if to this number the visitors and wives could be added, the number would be increased to more than 10,000 people.

This was a large gathering for any nation to entertain, yet English and London physicians were equal to the occasion and deserve great credit for the masterly way in which they cared for the visiting physicans of all nations and tongues.

The formal opening of the Congress by King George's representative, Prince Arthur, held in the enormous Albert Memorial Hall which seats 10,000 people, was a most impressive and inspiring occasion. The section on Dermatology and Syphilis was presided over by Sir Malcomb Morris, and its meetings and clinics held in St. Thomas Hospital. This hospital is most beautifully situated on the banks of the Thames directly opposite the Parliament

* Read before the Wayne County Medical Society Sept. 29, 1913.

buildings. The attendance in this section, drawn from the register of the section, was over two hundred. To this number of regular registered dermatologists, a hundred more could easily be added who were in more or less constant attendance at our section meetings.

The list of American Dermatologists numbered nineteen with three from Canada.

Among the number of distinguished foreigners who attended the section were: Professors Gaucher, Hallopeau, Ehrlich, Gastou, Blaschko, Peterson, Ciarrochi, Darier, Finger, Gallaway, Graham-Little, Jadassohn, Jamieson, Joseph, Walker, Morris, Sabourand, Sequeira, Unna, Wassermann, Hata, and many others familiar to us as authorities.

Following the President's address was the informal response from the delegates of all the countries represented. The first to be called upon was our delegate, Dr. J. A. Fordyce, who most admirably represented our country in dermatology.

The most valuable feature of our section was the exhibition of over ninety rare cases which had been most carefully selected from that immense clinical material of the City of London, which in reality represents clinical material from all over the world. These cases were shown in six successive demonstrations preceding the section program. They were exhibited, well scattered, in most excellently lighted and ventilated rooms and each case accompanied by a brief typewritten history. A complete typewritten list of the cases exhibited on that day was handed to each member before the clinic opened.

Time would not permit anything but informal discussions of questionable cases, yet these discussions were most instructive, nor will space permit giving the list of diseases presented in this clinic of rare cases, yet I assure you that if one were to live many hundred years, he would not be able to duplicate the material in interest shown at this section. Weeks, months, and years, were needed to collect and arrange this material and words cannot express our gratitude and thanks to the untiring efforts of the Chairman, Dr. Sequeira, and the members of the Clinic Committee for their excellent work.

In connection with the clinic should be mentioned another most interesting feature, and that is the exhibit of photographs, wax models, historic sketches, etc. More than 15,000 individual subjects were shown in this dermatological museum of the Congress.

Upon the official program five general themes were presented for discussion:

The first was that of "Epithelioma of the Skin, Benign and Malignant." The reporters selected to present the subject were Drs. Darier, Fordyce, and Jadassohn. The subject was most ably discussed and it is quite impossible for me to refrain, because of national pride, from commending in the highest terms the address and lanternslide demonstrations by Dr. Fordyce. The exhibition not only covered most completely all forms of epithelioma, but is by far the most excellent collection in existence.

The second general theme was that of "Alopecia Areata and Allied Conditions," presented by Prof. Sabouraud and Prof. Pellizarri. Sabouraud considered the alopecia a non-contagious disease, but is inclined to believe that at least one fourth of the cases show hereditary tendency. He considered Jacquets reflex to apply in only one sided alopecia of small areas, and to be considered as a symptom rather than a disease of nervous origin of varying causes.

The third subject for discussion and by far the most interesting of the selected subjects, was that of "Syphilis, its Dangers to the Community and the Question of State Control." This subject was discussed in a joint meeting with the section on Forensic Medicine. The discussion of this subject, because of its general public interest, attracted a great deal of attention and space in the lay press, and just here I wish to commend the daily press publications of the transactions of the Congress and especially the London Times. Special medical reporters were in attendance at all sections and their work is deserving of the highest praise for its accuracy and high medical character. At the conclusion of this joint meeting the following resolutions were passed:

"That, sensible of the ravages wrought by syphilis in the health of the community and deploring the inadequacy of existing facilities for checking its dissemination, the International Medical Congress calls upon the Governments of all of the countries here represented:

1. To institute a system of confidential notification of the disease to a sanitary authority, wherever such notification does not already exist.

2. To make systematic provision for the diagnosis and treatment of all cases of syphilis not otherwise provided for.

The first speaker upon the subject was Prof. Blaschko, who stated that we must first of all recognize that prostitutes cannot be rendered entirely free from venereal diseases. It is our duty to try and reach the danger class, namely the young clandestine prostitute. He maintained that the regulation by law of prostitution had not lessened the amount of syphilis and most strongly commended early and vigorous combined treatment of salvarsan and mercury.

Prof. Finger advocates the controlling of

prostitution by the health board instead of the police, strongly recommending compulsory measures in the care and treatment of every young, weakminded or degenerate person. He recommended the following resolution:

1. Instruction of healthy persons, especially the young, concerning the meaning of sexual life and venereal disease, as well as individual prophylaxis.
2. Removal of all obstacles from moral or other standpoints which interfere with individual prophylaxis.
3. Instruction of diseased persons by official pamphlets given them by physicians.
4. Instruction of the wet nurse concerning venereal disease.
5. Regulation of bureau of wet nurses. Laws for the protection of wet nurses and nursing infants; examination of wet nurse and child by Wassermann test; erection of lying-in hospitals; encouragement of mothers to nurse.
6. Reform in sanitary conditions of roomers.
7. Improvement in treatment. Special wards in hospitals. Pay beds for the middle classes. Ambulatory treatment at suitable hours. Free dispensing of drugs. Cost of treatment to be borne by the state.
8. Passage of a law making the wilful or careless communication of venereal disease a criminal act.
9. Introduction of restricted compulsory treatment.
10. Forbidding treatment by venereal quacks; forbidding the advertising of treatment by mail and the sale of medicine for self treatment.

At the conclusion of this meeting Professor Gaucher and Gougerot urged the adoption of the following measures:

1. Individual education of young men and young girls, explaining the dangers of venereal disease, promiscuous kissing, etc.
2. Education of the heads of families in that mothers should instruct the young girl and that parents should demand a medical certificate from the candidate for marriage. Reform of medical secrets, allowing the head of the family to be informed when one of his children, who is under age, suffers from a contagious disease.
3. Education of married people, so that the husband, who is a victim of a venereal disease, shall cease marital relations at the first appearance of a suspicious lesion; that the wife will receive preventive treatment during pregnancy, and the child be periodically examined and not given to a wet nurse.
4. Stricter observation and especially protection of the wet nurse, by compelling a medical examination of the parents of the infant as well as the infant itself. By periodical examination of the latter as well as of the wet nurse.
5. Medical examination of children's nurses, especially with regard to venereal diseases.
6. Police regulation for sterilization of napkins, knives and forks in restaurants and hygienic measures in barber shops.
7. Regulation of dangerous industries, such as glass-blowing.
8. Careful sterilization of medical instruments, the use of wooden tongue depressors, etc.
9. Hospital reform, including admission upon demand of venereal patients, subdivisions of medical wards, allowing small portions to be set aside for venereal patients, without having the name of the hospital or special ward serve as a reproach to its patients. Abandonment of special hospitals and even special venereal services except for purposes of teaching. Sunday and evening clinics, allowing patients to be treated without interrupting work, and free medicine to poor patients.
10. Obligatory aid to be given by benefit societies to members who are subjects of venereal disease.
11. Obligatory instruction and a special examination in venereal diseases to students of medicine.
12. Suppression of medical quacks.
13. Treatment of syphilitic prostitutes. Suppression of trapping, procuring, houses of prostitution and white-slave traffic. Penal offense for transmitting syphilis.
14. Protection and re-education of prostitutes who are under age.
15. Continuing the present work of aiding older prostitutes.
16. Prevention and suppression of prostitution, discovering the child's father by giving the outraged girl the rights of a legitimate wife and by imprisonment or fine for a man deserting his mistress.
17. Protection of the young girl by education, by providing places of refuge for girls out of work. Protection of young girls seeking employment and away from home.
18. Moral education. Respect for young girls. Severe punishment for adultery. Marriage at an earlier age, which would render prostitution useless.

On Monday morning the section on Dermatology convened in joint meeting with the section on Naval and Military Hygiene to discuss the fourth general topic, that of, "The Treatment of Syphilis with Salvarsan and Allied Substances."

This meeting was by far the most enthusiastic and important to the section members. The pre-eminent one to present this subject was Professor Ehrlich. As he arose to address this large joint meeting the lengthy applause which

greeted him was a more thrilling expression of admiration than has been given to any medical man that I have had the pleasure to witness, when we consider the audience who contributed this expression.

He addressed the meeting in a most distinct and eloquent German which was exceedingly appreciated by the foreign listeners. He stated that he did not wish to discuss salvarsan from a clinical standpoint but wished to confine himself in his remarks to the action of the drug upon the organism, its action upon tissues of the body and the technic of administration. He conceded that the action of the drug upon the spirochetae in the human body was an indirect one as the organisms were not killed by salvarsan in vitro. He considered the febrile reactions following its administration to be due in most instances to faulty technic and to the liberation of toxins by rapid destruction of the spirochetae. This latter action he considered could be modified by the preliminary use of mercury. He maintained that the mortality was less than that due to chloroform, and that the percentage could be further reduced by more careful consideration of some contra-indication. He maintained as contra-indications renal insufficiency, Addison's disease, and status lymphaticus.

Much disappointment befell the section when it was announced that Prof. Neisser could not be present and present his most valuable contribution to the subject. Short abstracts from his communication are worthy of mention.

He strongly advocates the combined salvarsan and mercury treatment because of the clinical and serological effectiveness and states that they are less dangerous combined than given singly. The action of salvarsan in his opinion was not of itself neurotropic. At the present time, based upon most extensive clinical experience, he remains a most ardent adherent to salvarsan in the treatment of syphilis and recommends that every case must be treated as an individual infection.

Following Prof Ehrlich was a joint paper by Lieutenant-Colonel T. W. Grovel and Major L. W. Harrison of the Royal Army Medical Corps. They gave some very valuable, carefully compiled statistics of the results of treatment with salvarsan alone, neosalvarsan alone, salvarsan, neosalvarsan combined. Also combined salvarsan and mercury, also combined neosalvarsan and mercury, groups of one hundred cases treated by each method. The best clinical and serological results which were followed by a small percentage of recurrences over a longer period of time were those of the administration of two doses of salvarsan three weeks apart to be followed by nine intramuscular injections of mercury, covering a period of nine or ten weeks. They estimated that salvarsan is now an annual saving of 70,000 to 80,000 hospital days. The statistics so collected from the medical corps of the regular armies of nations are without question the most valuable statistics because of the absolute control of the infected patient over a long period of time.

Further discussion was given by Prof. Wassermann, Hallopeu, Fordyce, Levy-Bing, Woods Hutchinson, and others.

The last theme for general discussion was that of "Vaccine Treatment of Skin Diseases." "The Present Status of Vaccine Therapy in Skin Diseases" was most thoroughly covered by Prof. Gilchrist. He spoke of the wholesale indiscriminate use of vaccines in his own country. He commended the autogenous vaccines and spoke most disparagingly of the mixed stock vaccines that are placed upon the market by different pharmaceutical firms.

He was followed by Dr. Whitefield of London who summed up his extensive experience in the following conclusions:

In certain acute infections of the skin, as erysipelas, appropriate vaccine treatment was the only direct curative measure. In furunculosis, vaccines would alter the course of the disease and prevent the occurrence of new lesions. Certain diseases, such as sycosis, tending to become chronic from the outset, might be cured at first by vaccine therapy, but were exceedingly refractory if long standing. In tuberculosis of the skin, the method was of some value in clearing up indolent lesions, such as those of Bazin's disease.

The other portion of the scientific program consisted of twenty-nine independent papers which took up some phase of the subjects which were selected for general discussion. It was impossible for one to hear all of these papers as the number compelled them to be given in two meeting places conducted at the same time.

After the conclusion of the scientific program a short executive meeting was called by President Morris, around whom the Vice-Presidents and Secretaries of the Section were seated.

The closing remarks of the President, the expression of commendation and thanks from the foreign delegates to the officers of the section, and the short response from the Vice-President and Secretary, was the most impressive expression of international bonds it has ever been my pleasure to witness. Impressive because the time had come for our parting, and with our "good-bys," *"au revoir," "auf wieder sehen,"* the great International feast passed into history.

In conclusion one could not be excused in reporting any phase of the Congress without mentioning the most extensive and varied forms of entertainment.

The afternoons and evenings were filled with

triple the number of functions one could possibly attend; this number allowing one to select the one or two he would most enjoy.

The Congress *Soiree* at National History Museum; the entertainment by the City of London at Guildhall; Windsor-garden party given by King George; *Soiree* given by Lord and Lady Strathcona were the functions of general invitation.

Following the class A functions just mentioned were the separate section entertainment, consisting of garden parties at the numerous hospitals where sections were held; evening receptions and dinners.

The section on Dermatology and Syphilis was most royally entertained. Many series of dinners were given by the London dermatologists and while the members were entertained at dinner, the wives were being entertained at afternoon tea, garden parties, private galleries and evening dinners by the wives of the London dermatologists.

The Students College Club of St. Thomas' Hospital was thrown open to the section members for lunch and refreshments.

The section garden party held at St. Thomas on the lawn and esplanade on the banks of the Thames with the Parliament buildings as a background, was a most impressive and enjoyable fete, as was also the reception given by Sir Malcolm and Lady Morris at Prince's restaurant.

REPORT ON THE MEDICAL SECTION OF THE INTERNATIONAL CONGRESS OF MEDICINE AT LONDON *

E. W. HAASS, M.D.,
DETROIT, MICH.

In addition to the general meetings, the program of the 17th International Congress of Medicine showed a division of work into twenty-three sections, a number with several subsections, ranging from anatomy to the history of medicine. In the Medical Section, the mornings were given up to the presentation of reports on selected topics followed by the discussion of the same; the afternoons to the presentation of the patients illustrative of the subject matter of the morning, followed by the usual short papers read at medical meetings. Sir Wm. Osler presided and the meetings were held in the auditorium of the Royal Society of Medicine, Cavendish Square.

The Society possesses a magnificent building containing many large and small assembly rooms, library, rooms where luncheons can be served; is equipped with an electric elevator and is finely furnished.

The first symposium concerned itself with, "The Clinical Aspects of Haemolysis," with papers from Banti, Widal and Hunter, and many enrolled in the discussion. Some of the points brought out touched upon the probability of the spleen acting as an haemolytic organ, incited thereto by toxins, and brought up the question of splenectomy in progressive pernicious anemia. Hunter tried to show the seasonal incidence of grave anemias, being worse in the autumn months with remissions in the spring. He claims that ninety per cent. of all severe anemias are due to sepsis, and curable if the cause can only be found and removed.

The next morning was given over to the topic: "The Correlation of Organs of Internal Secretion and Their Disturbances" at a joint meeting with the section on Physiology, with Prof. Schafer presiding. It was opened by Gley of Paris, and followed by Biedl of Vienna, Koranyi of Buda-Pesth, and Kraus of Berlin, with Cushing of Boston to open the discussion. It was partly a critical review of the work of the past with the presentation of some new work as follows:

The chemical nature of most hormones is as yet unknown. Hence exact proof of increased or decreased production cannot be shown, rather changes in the morphology of the organs themselves. In other words the proof of an increased or decreased hormone production in the sense of a hyper- or a hyposecretion cannot be demonstrated; rather the changes in the organs themselves which can be interpreted as an evidence of increased or lessened activity. The proof of hormone influence, that is, the variation of the secretion of one organ as influenced by the secretion of another has also as yet not been furnished. Yet the newer researches bring out a probable relationship of the hypophysis and the testes (the *pars intermedia* of the hypophysis), a relationship of the testes and the adrenals, and an adrenal influence on puberty. And we hear the statement that Graves' or Basedow's disease possibly at all times but surely for the condition at the height of the disease is a pluri-glandular disease. Hence the operation for the removal of a portion of the thyroid gland can have but a relative value. That the term hyperthyroidism will give way to that of dysthyroidism in the near future, and that the water-borne etiology of goitre will in all probability be succeeded by the contact theory are other statements. Further, that the para-thyroids and thyroids probably are supportive rather than antagonistic to one another.

Cushing strongly brought out the influence of heredity;—an acromegalic mother with a child of six, which menstruated at the age of

* Read before the Wayne County Medical Society, Sept. 29, 1913.

two and acquired secondary sex characteristics at three. Likewise, he touched upon the relationship of polyuria to hypophyseal disturbance, pointing to the frequency with which diabetes insipidus was noted as accompanying basilar lues, optic atrophy, hemianopsia. The problem of sleeplessness and hibernation in their relationship to the hypophysis was enlarged upon. Feeding the gland will bring an animal out of the state of somnolence; an operation for removal of part of the gland is often followed by drowsiness.

Next attention was given "The Pathology of Heart-Failure," with Vacqez, Wenckebach and Hering presenting papers and many taking part in the discussion. One demands we must distinguish the failures due to weakness of stimulus production and disturbance of conductivity from that due to weakness of the heart muscle. Another claims the problem of the future is to estimate the direct power and the reserve force of the heart muscle. A third foresees a chemical pathology with the influence of the proteins on the heart muscle the chief factor. Another finds the coronary circulation the deciding factor. We are also told that the earliest, entirely subjective, symptoms of heart failure are more important than the later objective findings. Many demonstrations were made, for example of inflammatory changes in the nodes, of the influence of venesection on the height of the electro-cardiogram, etc.

Monday was given to the subject of Diabetes with Dock and von Noorden as the reporters. Dock pleaded for a selective treatment, for a greater individualization of cases, as offering the greatest hope of improvement in the future. Von Noorden dwelt upon the pancreas-chromofine system control over sugar-metabolism, the thyroid, parathyroids, hypophysis, sympathetic center being given place. He advised a "Schonungs" therapy—resting the organs involved, as in heart disease. The sugar loss is relatively of little importance, the hyperglycaemia and the wearing out of the organs involved in the metabolism of carbohydrates being the factors to be feared.

Tuesday brought forth "the Differentiations of Diseases Included under Chronic Arthritis," with Barker and Friedrich Mueller as reporters. Barker divides the arthritides in five groups:

(1) Gout.

(2) Neuropathic arthropathies (Tabes, Syringomyelia).

(3) Primary hypertrophic osteoarthropathy.

(4) Secondary arthropathies following infectious diseases.

(5) Chronic progressive polyarthritis (rheumatoid arthritis), which, however, may belong to type four.

Mueller distinguishes but two types: arthritis and arthropathy; the former for the inflammatory, the latter for the degenerative forms. He wishes the terms rheumatic and rheumatoid abandoned as applied to the chronic forms of joint disturbance. The infection of acute diseases may linger for years in the joints and bones, the weakly virulent organisms appearing to have a special affinity for the joints. He lays stress upon the influence of old injuries, to injuries from overuse (the presenile type), to static influences, for example, injury to the knee from the weight of the body, especially in the monarticular type. He points to the serum disease of joints and asks for a study of the phenomena of anaphylaxis and protein toxins as related to joint disturbances; to joint trouble associated with thyroid disturbance; at the time of the menopause; in connection with tumors in the mediastinum; and associated with skin disorders, as psoriasis, and points out a relationship with the organs of internal secretion.

A great many short papers more or less interesting were read but the limit of time set upon this report forbids mention of any.

THE XVII INTERNATIONAL MEDICAL CONGRESS, LONDON, AUG. 6TH TO 12TH, 1913. UROLOGICAL SECTION *

FREDK. W. ROBBINS, M.D.
DETROIT, MICH.

It is difficult, in the space alloted, to report at all adequately the many matters of interest connected with the great medical congress in its splendid setting. One can hardly conceive of a more perfect place for holding general meetings than that splendid, ten thousand capacity, Albert Memorial Hall, at the gates of Hyde Park. On its platform sat, magnificent in his robes of honor, the President, Sir Thomas Barlow. Around him and in front were many robed men of note, lending color and dignity to the general meetings.

Prince Arthur of Connaught, representing the King and Lord Gray, in plain morning dress, welcomed the assembled representatives from all parts of the world in a manner that demonstrated to all the friendly and sympathetic interest of the leaders of the English Empire in the labors and aspirations of the medical profession. At this first general meeting all gathered. At its close the individual members of the congress scattered, and for the next two weeks no two persons saw things alike; one going here, one there as interest or accident determined. The writer was particularly interested in a few of the many social functions, in the London Hospitals and the

* Read before the Wayne County Medical Society, Sept. 29, 1913.

work done there, and in the section of Urology.

This section was one of the smaller of the twenty-three sections in which scientific work was reported, and Prof. E. Hurry Fenwick was its able presiding officer.

The three important subjects reported and discussed were:

Diagnosis and Treatment of Early Malignant Disease of the Prostate.

Diagnosis and Treatment of Early Renal and Vesical Tuberculosis.

Diagnosis and Treatment of Haemic Infections of the Urinary Tract.

Dr. Hugh Young reported on the first and Dr. George E. Brewer of New York on the last subject. Very little new was brought out, and to one not conversant with foreign languages much that might have been of interest was lost.

In the combined sections of Urology and Dermatology, which met to hear Ehrlich, Wassermann, Hata, and others, in the discussion on "Syphilis and Its Treatment with Salvarsan" enthusiasm unrestrained was the greeting of Prof. Paul Ehrlich as it was on the 8th of August when he rose to deliver the address in Pathology at the general session.

Certainly beyond the mere necessities of life, no one need desire a greater honor than that conferred upon Prof. Ehrlich by the medical profession of the world in London.

As to the hospitals of London, one is surprised to learn that all are strictly charitable institutions. Some are beautiful modern buildings—others were built by some of the Roman Catholic orders before the time of the protestant reformation, but now all are governed by trustees who are continually asking contributions with which to carry on the work. There are no private rooms, no pay patients, and considerable care seems to be exercised to prevent those able to pay from entering the hospital wards. The two chief reasons for the existence of a hospital seem to be care of the sick and teaching medical students. There are no hospitals for the well to do. Many more patients are operated on at their homes than is the case with us. If this is not feasible patients are taken to nurses' homes. Of these institutions we know nothing. Entire streets may be given up to nurses' homes. From the outside one would not differentiate them from ordinary residences. The nurse or nurses in the homes care for their patients, but in some instances one or more surgeons control a home, in which is an operating room and hired nurses or sisters as they are often called. In the surgical homes there are no resident physicians and, as compared with the beautiful well equipped operating rooms of many of the hospitals, none worthy the name. It may be very well said that only the poor receive hospital treatment in London and they get the best.

It seems not to be difficult for a few men interested in a certain class of cases to get a charter for a hospital in which such cases may be treated, and they appeal successfully to the charitable public for means with which to support it. The renowned St. Peters Hospital, dedicated to the surgical treatment of stone and other urinary diseases, is a shining example of such special hospital.

Herr. Freyer, Edwards, Walker and Joly operated before an interested group on several successive days. Prostatectomies, supra-pubic of course, bladder tumors, stricture of urethra, and stone in the bladder were the cases here seen. Otis dilating urethrotome is not used; instead, the Maissonneuve which cuts from before backward.

Mr. Fryer did a lithopaxy employing Bigelow's instruments with which we are perfectly familiar, and it was very interesting to watch Russians and French, who evidently had never seen them used. Litholapaxy is without doubt a much more desirable operation than suprapubic lithotomy in suitable cases, and it seemed strange that so many prominent men had not appreciated the fact.

Mr. Kidd, at the London hospital, was very kind to visitors. His kidney and ureteral work was of special interest, particularly his method of approach to stone in the lower end of the ureter through a short abdominal incision. We shall hear a good deal of Mr. Kidd in the future, and I would suggest that those surgically inclined, when on a visit to London, make an effort to meet him and see his work.

We wish to express our appreciation of the English as hosts. The social functions were many. Each had its own point of special interest. Lord Strathcona, over ninety years of age, who with his gracious wife greeted several thousand visiting physicians who responded to their invitation to a reception given in the Garden, will long be remembered. Nor will a Sunday afternoon at Clevedon, one of the most beautiful spots on the Thames, be soon forgotten.

The four hundred guests were met at the special train and driven back four miles to and through the estate where Mr. Astor, formerly of New York and now M. P., received us with a charming friendliness. His artistic house was thrown open from top to bottom for the pleasure of the guests. The weather was perfect, and for two hours we enjoyed the gardens, the terrace upon which music and refreshments were dispensed, and also the river, as in groups we entered launches and sailed down the river and back again, catching lovely glimpses of the palace from time to time between the trees.

The Natural History Museum was well fitted

for the first great social event of the congress, the President's Reception. So spacious that in the crowd one did not feel crowded, and so filled with interesting things that even when separated from friends one could not be lonely.

Windsor, where the King's Garden Party was given, Oxford, Cambridge, Bath, were the objective points towards which several pilgrimages were made.

In closing I wish to say a few words about the most beautiful reception given by the Masters and Wardens of the Grocers Company at Grocers Hall. It does not sound so much does it? When we surgeons were barbers in 1457 this company was organized, and I take it that the Grocers Guild may be taken as a type of the many guilds in London. Presumably their origin may be accurately judged from the name, but from that name one cannot conceive their present status in the social life of the great city. They are to-day the most exclusive of clubs and very wealthy. Imagine a club formed nearly five hundred years ago to which had been left real estate. As our friend, Dr. F. W. Mann, called to our attention the fact that London is the only city of any note that has never been in state of siege; whose treasuries have never been dissipated by the stress of war; our eyes became opened and we dimly appreciated why, for one good reason, London abounds in treasure. Their guild houses are treasure houses, dignified in their grand plainness without, rich in their elegant, restful woodwork and furnishings within. Instead of bronze on a table may rest an artistic group three feet long by two high of solid silver, or on the mantle solid gold plates, tea sets, etc., etc. Here was elegance not to be wondered at but to be enjoyed.

Supper was announced about ten P.M., and we marched to the supper room with great dignity, and there found one of the most perfectly appointed suppers it has been my pleasure to enjoy. Each table accommodated four guests. The viands looked too good to be destroyed by knife and fork, but the champaigns not too good to drink. To enjoy such a room, to enjoy the attendance of such trained servants, to appreciate the rich but not oppressive elegance of all the surroundings, to think of such organization keeping intact the increment of hundreds of years, was to emphasize the fact that we were not in America but enjoying the hospitality of our ancestors, who, when they established this club, did not know that the new world existed.

THE BEST WAY FOR DOCTORS TO SAVE MONEY.

Every man who has ever engaged in the practice of medicine understands why doctors do not get rich. The writer thoroughly appreciates, as do all my readers, the multitude of good reasons why. But the Editor has never been able to understand why the majority of doctors remain *poor;* absolutely poor. There is a wide stretch between being poor, having a competency, and getting rich. We cannot tell any one how to get rich, but we think we can tell all of you (at least the younger men) how they may certainly and surely amass a competency for their old age. The reason why the majority of doctors remain poor is because they *do not know how to save money.* We are not now going to warn you against foolish "investments"; we are merely going to tell you how, without failure, you can put enough aside to make your old age comfortable.

You have all heard of progressive compound interest, but have many of the family tested it out over any considerable portions of their lives? Do you know that $1 deposited in a savings bank paying 4% interest will amount to $2.19 in twenty years. That is simple interest, and is very slow work. But do you know that if you deposit $1 *every year,* the value at the end of twenty years will be not $2.19, but $30.97? Any doctor at all can save $1 each and every week. Put that in a bank every week for twenty years and you will have $1,612. Very few doctors but could easily save $5 every week; good; put that in a bank every week for twenty years and you will have more than $8,000. Note that the annual interest on this amount is $320.

Consider that the man who deposits $5 every week in a savings bank, can, after twenty years, *draw out $6 every week, and still leave his family at his death all the money he ever deposited and more than half as much more.* There is no trick of legerdemain in this; it is no dream. Cold facts count.

This is, we think, the best way to save money, especially for doctors. Doctors are proverbially "easy" with their money. That is, they generally have a *little* money in their pockets at all times, and are very prone to spend a *little* of that money for something not absolutely essential to either their comfort or welfare. The *"little"* escapes, where, had it been held for that weekly deposit, through the course of time, competency instead of poverty would have resulted.

Still more astonishing facts can be elicited along these same lines. If, instead of discontinuing the deposits at the end of twenty years, they are continued ten years longer, *every dollar a week will have become* $5.83, and the $52 a year will have become over $3,000. For every dollar which has been deposited under this plan, *$2 can be drawn out every week.* and the original sum, like the oil in the jar of Arabian Nights tales, will remain unlessened.

It takes time to accumulate money in this way, of course, but it is certain. There is nothing dazzling about it; no secret; no mystery; no allurement, such as is held out to you by vivid literature issued by the promoter. It requires, possibly, a little self-denial each week; and some industry and perseverance, of course; that is all. It *pays better,* in the end, that any gold mine, copper mine, banana scheme, or far beyond the horizon scheme to make you wealthy "over night." This is why we say it is *the best way to save money.*

—*The Medical World.*

DO NOT FAIL TO ATTEND THE NEXT MEETING OF YOUR COUNTY SOCIETY.

Transactions of the Clinical Society of the University of Michigan

Stated Meeting, October 1, 1913

The President, R. BISHOP CANFIELD, M.D., in the Chair

Reported by REUBEN PETERSON, M.D., Secretary

Reading of Papers

ANNUAL REPORT OF THE SECRETARY-TREASURER FOR THE YEAR 1912-1913.

REUBEN PETERSON, M.D., SECRETARY.

It seems fitting that your Secretary's report should be of a somewhat more formal character this year than has formerly been the custom. For not only does the report cover the tenth year of the Society, since it was founded in 1902 and 1903, but as will be shown, the committee appointed at the last meeting with power to act, has planned a new departure for the Society so far as its transactions are concerned.

Ten years can hardly be said to be a long existence as medical societies go, but this period in the life history of this Society has seen so many changes in the Hospital, with which the Society is so intimately associated, as to make the decade memorable. Like many another medical society, it has had its ups and downs. During the first few years of its existence, at times it languished and seemed about to die. That it did not perish was in part due to the untiring efforts of some of its founders and friends, but principally, I believe, because there has been a distinct need for such a society in our midst. Otherwise it would have gone out of existence long ago.

When Dr. George Dock and your Secretary, planned the new society in 1902, we realized that there were enough regulation medical societies in this community. These societies were well attended, and were doing good work. The new society was to be along different lines, for its underlying idea was the utilization and demonstration of the rich clinical material at the disposal of the members of the University of Michigan Clinical Staff. Set papers were to be avoided unless they had to deal with clinical problems. On the contrary, the members of the various departments of the Hospital, were to be given an opportunity of showing at the meetings of the Society, patients with unusual diseases or complications or where it was impossible to show the patients themselves, to give case reports which were to be followed by comments, deductions and general discussion.

It may be said that this idea, upon which the Society was founded, has been kept constantly in mind throughout the past ten years. Long winded, tiresome, although possibly exceedingly scientific papers, have been conspicuous for their absence. As a regular attendant upon the meetings of the Society for the past ten years, I can bear testimony to the great benefit I personally have derived from the demonstration of cases quite remote from my own field of work, and I feel confident that my own experience coincides with that of other members of the Society.

But apart from what may be learned from the reports of cases, and the demonstration of patients, the founders of this Society had in mind the opportunities such a society would afford the younger men of the Hospital Staff of gaining experience in medical writing, speaking and discussion. There are tricks in all trades, and the trick of clear expression on medical subjects is not born with a man, but must be acquired. With this end in view the heads of the Hospital departments have constantly urged their assistants to make the most of these advantages.

Four years ago the Society, through the aid of the Regents of the University, was able to engage a stenographer, so that the discussions of each meeting might be reported in full. The papers and discussions were published in the *Physician and Surgeon,* and many reprints sent to the physicians of the state and medical alumni. In addition, two hundred and fifty reprints of each meeting were set aside and at the end of the year bound into volumes, which were distributed among the members of the Society, medical libraries throughout the world, and prominent medical alumni. These reprints and volumes have been the means of placing in medical literature the records of many valuable and interesting cases, which

otherwise would have been lost. These volumes have added to the fame of our Hospital and Medical School.

The fourth volume of these transactions is now in press, and will appear shortly. With its publication will cease, for the time being at least, the Society's official connection with the *Physician and Surgeon,* in which journal has been published most of the papers and discussions of the Society for the past ten years. To Dr. John William Keating, the editor of this publication, and formerly secretary of this Society, the latter owes a great deal, for he has always been its staunch friend. But your committee to whom you referred, at the last meeting, the matter of the Society's transactions, did not feel justified in not accepting the most liberal offer of another journal, especially as the *Physician and Surgeon* did not see its way clear to make any bid for the transactions for the coming year. Your committee, therefore, has selected the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY, as the official organ of the Society. This assures the reports of the meetings being made available to the twenty-four hundred of the JOURNAL'S subscribers each month. At the completion of the Society's year in July or August, two hundred and fifty copies of Volume V, will be bound and distributed as in the past.

It seems fitting that the transactions of the Clinical Society of the State University, should appear in the organ of the State Medical Society, since as citizens and physicans of the state, the members of the State Medical Society ought to be able to keep track of what is being turned out by the men in charge of the Hospital connected with their State University, and they should have easy access to just the kind of material which has appeared, and I hope will continue to appear, in our transactions, material helpful to the practitioner, for it is a record of the difficult and unusual cases, which the medical profession has referred to the Hospital.

The members of this Society realize that they must not stand aloof from the members of our great State Medical Society. Anything which will place us in closer touch with the medical profession of the State, will surely work to our mutual advantage, and this Society can be the means of making such bonds closer.

In closing, let me say that the future of this Society depends upon the individual efforts of each one of you. Nothing can be accomplished without hard work. It is oftentimes a hard and disagreeable task to attend a medical society meeting when one is mentally and physically exhausted by a long day's work. Yet we have chosen a profession where such days come all too frequently, but we must find time for the kind of work this Society stands for. else we fall to the level of those doing a vast amount of practical work with no written record of all that has been done and seen which would be helpful to others.

Therefore I bespeak your co-operation to make the coming year of this Society the most successful in its existence.

REPORT OF A CASE OF MULTIPLE INTRAUTERINE FRACTURES *

D. MURRAY COWIE, M.D.
CLINICAL PROFESSOR OF PEDIATRICS AND INTERNAL MEDICINE.
UNIVERSITY OF MICHIGAN.

(From the Pediatric Clinic, University Hospital, Ann Arbor, Michigan.)

The case I wish to report is as follows:

William D., age three weeks, entered the Pediatric clinic of the University Hospital, August 14, 1913 because of a congenital deformity of legs, hands and feet.

FAMILY HISTORY—There have been no deformities on either side of the family. The mother is twenty-eight years old, the father twenty-nine. One brother is living, six years old, and healthy. The mother has had no miscarriages.

Fig. 1. Photograph showing natural position of infant

ANTE-PARTEM HISTORY—When four months pregnant the mother slipped and fell, striking the left side of abdomen. She feared she would

* Read before the Clinical Society of the University of Michigan, Oct. 1, 1913.

abort and remained in bed after the fall, although she had no abdominal pain. The mother is a large woman, weighing 185 pounds. One month later (5th month) she fell down two steps. She caught the railing and in so doing

Fig. 2. Showing fracture of right humerus

wrenched her side. She was frightened several times during her pregnancy.

BIRTH HISTORY—The labor was full term. Pains were first felt at 5 A.M. They did not become marked until 6 P.M. At 10 P.M. the pains became severe, and at 10:30 P.M. the child was born, no instruments being required. The infant was deformed at birth, as shown in the illustrations. Resuscitation had to be resorted to.

PAST HISTORY—The infant was unable to nurse the breast, but has gained in weight since it was put upon the bottle. Birth weight not known, present weight 5 pounds 8 ounces. The bowels have been constipated, requiring oil. There have been no gastric symptoms. The skin has always been clear and free from eruptions, as has also the mouth and anus.

PRESENT CONDITION—The patient prefers to lie on the right side with the head thrown back against the spine. The head is flexed with difficulty, circumference 14 inches (normal 14½ inches). The anterior fontanelle is very small, 2cm. in diameter. The head is fairly well shaped. Ears show no stigmata of degeneration. The left leg is drawn up and the right is partially extended. The left upper extremity is constantly held in the position shown in the photograph. (Fig. 1.) The right, while not under the patient's control, is found in different positions. Both feet are clubbed, the left more than the right. There is a marked thickening over the upper third of each femur, giving the appearance of a fracture. There is no crepitus and the masses are hard. There are marked dimples of the large joints, giving the appearance of scars. (See knee and thigh, Fig. 1.) The hands are perfectly flat, especially the left, which gives the appearance of a hand cut out of card-board. The thenar and hypothenar eminences are absent. The fingers of the left hand are somewhat spindle shaped and curve inward. The hand is broad, 3.5 cm. as compared with the right 2.8 cm. The arms and left leg cannot be extended. There is a peculiar clear smooth redness of the skin of the right hand and fore-arm. The pupillary reflexes are normal. There is no nystagmus. The tendon reflexes cannot be elicited. The testicles are not felt in the scrotum. The prepuce is adherent. The skin and mucous membranes are negative. The nasopharnyx is shallow.

Examination of the lungs and heart is nega-

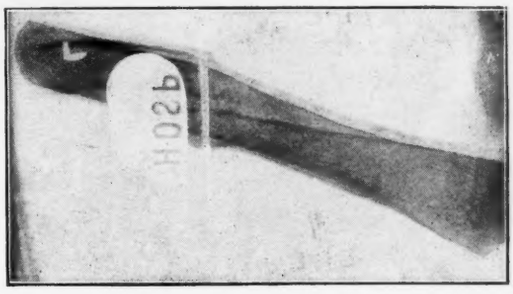

Fig. 3. Right humerus at another angle, showing repair

tive. The abdomen is difficult to examine because of the head being thrown backwards, making it tense. There is bulging in the flanks as shown in the photograph. This is soft and is due to the position.

RADIOGRAPHIC EXAMINATION shows a fracture of the left femur, right femur and right humerus. (Figs. 2 to 5) All of the fractures show advanced repair.

Examination of blood, urine and stool is negative.

True intrauterine fractures are rare. In a search through the literature Dr. Richard Smith succeeded in finding forty-three cases, these with his own case making a total of forty-four. In all of these cases a history of injury was obtained, the

most common being a fall or a blow on the abdomen. Less frequent causes in this series were bullet and gunshot wounds, and other piercing wounds of the abdomen. Five of the cases were multiple fractures.

In many of the recorded cases the lightness of the injury, apparently responsible for the fracture, is of great interest. It suggests some important predisposing cause. In some, the accident occurred before quickening. It seems hardly probable that a fall unless very severe would produce a fracture in utero at this time. It is well known, however, as we have had illustrated by a case in the children's clinic in a boy of nine years, that in *osteogenesis imperfecta* a fracture may occur spontaneously by the exertion of no greater force than that required to change the dressings, or through some sudden movement of the patient. In my case the first accident occurred before quickening, the second, of slighter degree, at about the time of quickening.

Of the three predisposing causes, osteogenesis imperfecta, rickets and lues, the former is probably the most important. From a study of the bone structure in this case I feel safe in making the statement that it belongs in this group. Some cases of intrauterine fracture have been mistaken for achondroplasia. The two conditions are entirely different, clinically and pathologically. Such a mistake could hardly be made in this case even without a radiograph for it is easy to see that the bones have grown in length, in other words, the cartilage is evidently proliferating normally. In osteogenesis imperfecta there is a faulty bone metabolism, the calcification is imperfect, and the disease is confined to the shaft of the bone.

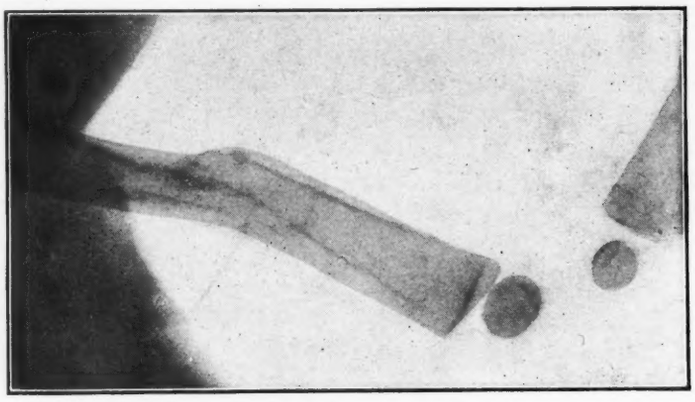

Fig. 4. Fracture of left femur

Fig. 5. Fracture of right femur

The cartilage is normal in shape and size. The bones are always brittle. Some authors believe there is such a thing as fetal rickets. There is a great difference of opinion upon this point. It it not at all improbable that many of the cases regarded as fetal rickets are cases of achondroplasia, a condition which is not so likely to predispose to fracture.

I am sorry Doctor Camp is not here to discuss the question of paralysis in this case. There is a paralysis of both upper extremities and it seems to be peripheral. I believe it may be accounted for by an injury affecting the nerve trunks. The paralysis is more marked on the right than on the left side. The early closure of the fontanel and the position of the head argues however in favor of central involvement.

DISCUSSION

DR. REUBEN PETERSON: I have read carefully Dr. Smith's most interesting and valuable paper upon the subject under discussion. Probably in this case the injury to the mother had nothing to do with the fractures since the fall was about the fourth month of gestation However, fracture is possible even this early as shown by Smith in one case. As a rule, the fetus is very well protected from external violence by the amniotic fluid and the abdominal walls which contract quickly under the influence of trauma. With flabby walled women, especially if the child be carried low, it would be possible for such fetal fractures to occur. It is well for practitioners to bear in mind the possibility of intrauterine fracture, so as to guard against a law-suit when the child is born with a deformity, since the X-ray would soon establish the correct diagnosis

DR. CYRENUS G. DARLING: I was particularly interested in one point in the case reported by Dr. Smith. The intrauterine fracture had united but with a resulting deformity. On the twentieth day after birth the child was operated upon and the ends of the bones placed in position. Still, the X-ray showed a deformity and a second operation became necessary. The bones were reunited with chromicized cat gut, and the patient made a good recovery. It is interesting to note how early in life these deformities may be corrected and good union take place. In the case just reported, the value of any operative procedure is very doubtful on account of the paralysis.

THREE CASES OF SECONDARY SYPHILIS *

JOHN H. STOKES, M.D.

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(From the clinic of Dermatology and Syphilology, University Hospital, Ann Arbor, Mich.)

The three patients, whom I wish to show, are all cases of lues, in the active secondary stage and all three still showing the primary lesions in various stages of involution.

CASE I. This is the case of Mr. C., who entered the Hospital with a brilliant maculo-papular rash. A feature of special interest in this case is the way in which he acquired his infection. We are, of course, sufficiently accustomed to expect the venereal exposure as a source. This man admits exposures but they were, according to his statement, all prior to his marriage a year and a half ago. The source of his infection is extramaritial, but it is also extragenital. The patient is a bartender, and in the course of his duties, he was obliged to eject a drunken patron from the saloon in which he was employed. The man made an active resistance and the patient found it necessary to strike him in the mouth. In so doing he cut the knuckle of the second finger of his right hand upon the man's upper teeth. The wound bled profusely at the time and was cleansed with peroxide by a druggist, who also applied a salve whose nature we do not know. For a week the patient had considerable pain from the cut, which, however, presently healed over and ceased to trouble him. About two weeks after the occurrence he first noticed a swelling at the site of the injury which enlarged slowly without affecting the mobility of the joint, and presented some bluish discoloration. The intumescence has remained essentially unchanged since reaching its present size, and the almost cartilaginous induration beneath the scar of the injury must be apparent to all of you. The lesion is a hard chancre. This man has developed an extramaritial primary, which is of a sufficiently well-known type to have received a special name —the brawl or fist chancre. It may serve as a vivid reminder to us of the risk which each and every one here may take when he strikes a tough or other opponent on the mouth with the naked fist, whether in self defense or in assuming the aggressive in response to an affront. Incidentally, with the history of the use of an ointment before us, let me remind you of the prophylactic virtues of the calomel ointment in 40 per cent strength, when promptly and vigorously rubbed into an abrasion open to the suspicion of having become infected with pallida. The absence of superficial erosion or ulceration in this case does not, in the face of the circumscribed, non-inflammatory, painless induration, invalidate the diagnosis of hard chancre. The last link in the chain of evidence establishing the specific nature of this lesion was obtained by Dr. Wile's aspiration of a small amount of lymph from the deeper portion of the induration with an ordinary hypodermic syringe. In this lymph we had no difficulty in demonstrating the presence of three or four pallidae to the dark field, one-twelfth oil immersion. The generalization of the infection from its initial site was of course followed by the outbreak of secondaries, of which his brilliant rash is the most striking. The eruption is polymorphous in character and may be described as a maculo-papulo-squamous, or more briefly as a large papular syphilide.

* Read before the Clinical Society of the University of Michigan, October 1, 1913.

A number of the lesions, especially on the trunk, were almost psoriasiform in type. The moment one glances at the eruption, however, one feels instinctively the indefinable premonition that this will on closer examination prove to be specific. The only rash with which this might reasonably be confused is that of a variola in the pre-pustular stage. The differentiation from the eruption, objectively, depends upon such factors as the distribution, the rash in this case involving the trunk too much for a variola, and the entire absence of any sign of actual or impending pustulation. The process moreover is an indolent one, the individual papules being of a much less lively tinge than the acutely inflammatory variola papules. The presence of the roseola with the papular rash is also an important element in the differentiation. If we permit ourselves to use the anamnesis, the entire absence of the characteristic prodromata of the variola eruption further establishes the specific nature of this rash. A very interesting feature brought out by this case is the inverse relation which exists between the large papular syphilide and the occurrence of mucous membrane lesions.

This patient, in spite of the extensive involvement of the skin, presents practically no involvement of the mucous membranes. In addition to the frank eruption this man presents other evidences by which we may estimate the severity of his infection. He has lost twenty-five pounds in weight in a few weeks, has marked nervous symptoms, has nocturnal osteocopic pains, cephalalgia, and according to his history, was for a time so prostrated as to be compelled to remain in bed. All these considerations identify the type of disease from which this man is suffering as the asthenic with the nervous symptoms perhaps somewhat more accentuated than usual. He has a marked general adenopathy, in connection with which let me call your attention to the striking difference between the epitrochlear of the right arm and that of the left. The axillary glands on the right are perhaps also somewhat larger than those on the left. This is, of course, somewhat more than the general secondary adenopathy —it is in fact the painless, indolent satellite bubo of this man's extragenital chancre. You notice that I wear gloves rather from habit than from necessity in this case. Contact with the rash so long as the patient's skin remains unbroken does not expose the examiner to the risk of infection, although of course the spirochaeta are present here beneath the unbroken cutis of the papules as they are in fact in every definitely syphilitic lesion. Should the surface of one of these papules, however, become eroded as it might, especially where moist surfaces are in contact, such a lesion would at once become a source of infection. This patient is married and it is, of course, a matter of importance to discover whether or not his wife and young child have been infected. Balancing the probabilities, in view of the absence of the highly contagious mucous membrane lesions the prospects seem good that they have escaped. We have, however, drawn blood from the mother for a Wassermann test. The patient's Wassermann is strongly positive.

CASE II. The second case which I want to present is one that came originally to the Surgical Clinic. This is C. B. nine years old, who was brought to the Hospital on account of a trouble with his hip, which is apparent at first glance. He is one of a family of a considerable number of children, all of them older than himself. The mother is dead and the father died last June of what was reported to be an ulcerating tumor on the face. There is no history of miscarriage and the children, as far as lues hereditaria is concerned, are entirely free. The patient had been with his father within a week of his first entry into the Hospital, on May 14th. He was discharged from the Surgical Service June 26th, and from that time until he re-entered on September 15th, he was under the care of his grandmother. During his first stay in the Hospital, no evidences of any skin lesion are reported. When he was brought to the Hospital the second time, however, there was a large eroded and ulcerating area on the scrotum at the root of the penis. The grandmother, according to the boy's statement, had given the lesion local treatment and it had been seen by his home physician, who apparently had found no reason to suspect its real nature. On Sept. 17th, his secondary rash was noticed for the first time.

As regards the length of time that the boy had had the scrotal erosion we have only the boy's statement that he first noticed the chafing and irritation from his trousers on June 26th, the date of his previous discharge. This would place the time of his initial infection in all probability prior to his first entry into the Hospital, when he was living with his father. When his general condition first attracted attention he had a roseola covering his entire body with the exception of the head, neck, face and hands. The possibility of an exanthem led to an immediate consultation on his case and the patient was seen by Dr. Wile. While the rash was macular over the body there were several discrete papules on the penis and by abrading the surface of one of these Dr. Wile demonstrated the presence of the pallida by dark field examination. The case was a distinctly puzzling one, although on analysis only one area over the left hip could well have passed for an early measles even had the distribution been typical. The relation between the area on the scrotum and the secondary outburst quickly became ap-

parent. This, too, is a hard chancre, conforming in a general way to the primary lesion described by Fournier as *chancre hypertrophique* although, of course, the tremendous intumescence of the hypertrophic chancre of the face, as described by him, is not present here. The general induration is less apparent now perhaps than before treatment was begun but I think you can easily see the more localized infiltration at the base of the penis which represents the remains of the true chancrous induration. You note also the slightly eroded area over the surface of the indurated plaque. This entire area is then the boy's primary lesion—a giant chancre. Just previous to his first injection of salvarsan given on the 21st, he showed the slight temperature, characteristic of the secondary stage. Following his injection he reacted violently, the picture being that of the typical Herxheimer reaction and indicating that the boy was full of pallida. His temperature rose rapidly to 104° about six hours after he received the salvarsan and was entirely unaffected by the tepid sponge which was ordered for him. It fell to normal as promptly towards morning. His roseola was considerably more vivid on the morning following his treatment, illustrating, of course, the typical temporary lighting up of the infection characteristic of a Herxheimer. The second injection, given on the 27th, in which he received twice the initial dose of fifteen hundredths grams, resulted in no reaction. The boy is now rapidly improving, although I think those of you who are near enough can still see, in spite of the artificial light, the last traces of the roseola on the trunk, showing through the normal *marmor cutis*.

The prognosis, of course, is of great interest in this case. It may be tersely expressed as bad in young children and very old men. Dr. Wile considers this boy's prospects of a complete recovery as very good. Had the boy been in the hands of even fairly competent medical advice at home, it is quite conceivable that an error in diagnosis would have allowed him to develop some perhaps serious tertiary accident before he came under treatment. The origin of the boy's infection, I am sorry to say, we are not as yet able to establish. The boy states that one of his married sisters had a blotchy rash and that he used her towels. How much of this has been suggested, of course, is problematical. The site of the lesion at the base of the penis lends color to the suspicion that this boy has been subjected to indecent practices and that contact with somebody's mouth or somebody's vulva is responsible for this primary sore.

CASE III. Mr. R. a case of secondary syphilis. The patient came to the Hospital with a sore mouth and a rash over the body. He gave a history of clandestine exposure, followed several weeks later by the development of a small, hard papule on the penis. The lesion did not reach a very large size and under treatment is now well on the road to involution. I think, however, you can all see the remains of the hard chancre on the prepuce and note the elevated, indurated plaque and the raw-ham coloration so often mentioned in Fournier's classic descriptions. The skin manifestations consisted simply of a roseola on the trunk and papulo-squamous lesions on the palms and soles. The patient, however, had a mouth full of mucous patches and a number of papules on the dorsum of the tongue. In this particular he illustrates, as did Mr. C., though in the opposite way, the inverse relation between the mucous membrane and skin manifestations in the secondary period. The patient is of the asthenic type, showing a marked loss of weight, fourteen pounds in nine weeks, a specific cephalalgia, arthralgia and myalgia, all of which showed the characteristic feature of syphilitic secondary pain—nocturnal exacerbations coming on especially after the patient is warm in bed. The arthralgia affected the left elbow and although the patient complained of slight stiffness, absolutely no evidence of joint involvement could be discovered.

This man's tibiae are especially interesting. Even at this distance I think you can note the non-inflammatory thickening due to a local periostitis upon the anterior surface of the bone in the right leg. Such a process, while not a true gummatous infiltration, is perhaps a rather advanced secondary manifestation. The highly localized excruciating tenderness on pressure is very characteristic of this form of periosteal involvement. The tenderness practically disappeared and the pain in the left elbow has cleared up following three injections of neo-salvarsan.

I might also call your attention to a rather rare condition which this man presented on entering—a secondary papule on the plica semilunaris at the inner canthus of the right eye. This is homologous in every way with a papular syphilide anywhere else on the body but its occurrence at this site is distinctly rare. I am sorry that arseno-therapy has deprived you of the pleasure of seeing it to full advantage. The papules on the tongue, those of you in front will have no difficulty in seeing. You note, of course, that they are elevated and that the surface shows no sign of the superficial erosion, with slight inflammatory areola and the grayish pellicle, characteristic of the mucous patch. We are, of course, interested again in estimating the virulence of this man's infection. He has a tremendous adenopathy, a finding not usually associated with a malignant syphilis. On the other hand even this early in the disease there is a marked involvement of the central

nervous system. Although the patient states that he has had no eye symptoms, ophthalmoscopic examination of his fundus shows that he has a neuro-retinitis. We should, therefore, be inclined to rate this as a rather severe case. Paradoxical though it may seem, this man is to be congratulated on the multiplicity and severity of his symptoms, which have brought him within reach of vigorous and systematic treatment. It is to be expected that under efficient management and with proper co-operation on his part, his infection will run a mild course to complete cure. Before I have him stand up for your inspection of his adenopathy I want to call your attention to the annulat whitened areas on the soles of his feet which represent the scaling remains of his papulo-squamous syphilide. The fact that all asthenics do not conform in every particular to an absolutely uniform type is brought out by the fact that Mr. C., whom I first showed you, has a very large, easily palpable spleen, while this man's cannot be felt.

You notice the remarkable discrete painless adenopathy in the cervical region on this patient. He might almost pose as a model for the visible demonstration of the occipital and posterior auricular, the parotid, the submaxillary and the anterior and posterior cervical lymphatic ganglionic groups. There is an equally striking enlargement of the inguinal, epitrochlear, axillary and femoral nodes. This is also an exceptional opportunity for us to post ourselves on the location of the sub-mammary node, at the lower border of the pectoralis major muscle. You note that it lies like a buck shot under the skin. On entrance he presented another evidence, possibly of lymphatic involvement in the form of a localized cylindrical swelling like a pipe stem under the skin on the inner aspect of the right calf. While it was hard and exquisitely tender, there was no sign of active inflammation, or of edema, discoloration or prominence of the superficial veins such as one would expect with a thrombophlebitis. The condition was interpreted as a lymphangitis, such as is sometimes seen on the penis during and after the presence of the primary lesion. The possibility of a periphlebitis was also thought of, and I must confess that with the light striking it as it does now, what remains of the linear infiltration is practically continuous with the visible elevation caused by the internal saphenous vein.

1608 Geddes Ave.

DISCUSSION

DR. HARRY B. SCHMIDT: I would like to ask Dr. Stokes if that lesion on the bone of the lower leg could be a tertiary lesion. Recently several internists have described secondary and tertiary lesions in the heart of patients in the secondary stages of syphilis. I recently saw a case, referred by Dr. Wile in the secondary stage of syphilis, who after salvarsan developed a bradycardia. The question arises whether the salvarsan produced this or a syphilitic heart disease.

DR. D. MURRAY COWIE: This patient entered the Surgical Clinic for treatment of tuberculosis of the hip. He had been discharged and re-entered for further treatment. When he left the hospital there were no signs of scrotal involvement or eruption. Soon after re-entering, the scrotal lesion was observed. Its nature was not recognized until after the eruption developed. He was referred to the department of infectious diseases, Dr. Crissy being then in charge, who made a provisional diagnosis of lues and referred the case to Dr. Wile who confirmed the diagnosis.

DR. STOKES (closing the discussion): The case that Dr. Schmidt has just mentioned was a very interesting one indeed. The young man was of the asthenic type. He was given a rather large initial dose of neo-salvarsan and had a marked reaction. At six o'clock the following morning his pulse and temperature were normal. He got up and walked down stairs without permission but later returned to bed. Within half an hour his temperature began to fall and his pulse fell with it. The drop continued until his temperature had reached 96.6° and his pulse 60. It was in the eighties on entrance. The boy looked yellow and had passed no urine for a considerable length of time. We were genuinely alarmed and immediately began vigorous stimulation. Under strychnine, local heat, hot coffee and whiskey enemata his condition improved during the day and the indefinable toxic expression and listless, drowsy manner passed off. During the night, however, his pulse fell to 46 and his temperature to 96°. On auscultation only a slight irregularity in rhythm was apparent. Several days later his treatment by neo-salvarsan was resumed and he received three other injections without complications.

The point which Dr. Schmidt brought out about the close relation between secondary and tertiary lesions I have heard frequently emphasized by Dr. Wile. The differentiation between a secondary and tertiary lesion in some usages of the term is based on chronology and refers to time rated from the initial lesion. It seems to me that the pathological basis for the distinction, which makes gummatous infiltration the essential characteristic of the tertiary period is a more rational one.

Relative to Dr. Cowie's point in connection with the boy, I might explain that Dr. Cowie was absent from the city at the time and through some inadvertance there was a miscarriage of the refer slips. We were not aware that the case had been diagnosed as secondary lues before it was seen by Dr. Wile

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TWO CASES OF CARCINOMA OF THE PROSTATE *

IRA DEAN LOREE, M.D.

Clinical Professor of Genito-Urinary Diseases, University of Michigan.

(From the Genito-Urinary Clinic, University Hospital, Ann Arbor, Michigan.)

The two patients whom I wish to present for your consideration are males, fifty and fifty-seven years of age. They both came to the Hospital because of difficulty in passing urine. The elder man has been sick since July and the younger man about the same length

* Read before the Clinical Society of the University of Michigan, October 1, 1913.

of time. They have both passed some blood, and while the elder is able to empty the bladder with a great deal of difficulty, the younger patient has almost complete retention. They have both had pain, not only across the lower abdomen but radiating to the thigh, perineum and glans-penis. On rectal palpation the elder man had a rather hard nodular mass in the region of the right lobe of the prostate, while the palpating finger in the other encountered a small mass of stony hardness not confined to either lobe.

On the above findings the clinical diagnosis in each case was carcinoma. In the elder man I performed a palliative operation, opening the bladder through a perineal incision for drainage and the relief of his pain and discomfort. At the same time a small portion of the tumor was removed for pathological examination, which, later, confirmed the clinical findings.

The younger man who, because of his retention most needed the pallative operation, desired to return home for a time before undergoing operative interference.

Carcinoma of the prostate may be divided into two classes, namely, intra- and extra-capsular. A large number of the former class that have come under my observation have shown an area of beginning malignancy in a lobe where senile hypertrophy had existed for a much longer period of time. The existence of malignancy is not suspected until the microscopical examination has been made and a large majority recover after an enucleation of the gland.

In dealing with the extra-capsular variety the surgeon sees but few cases that are favorable for the Young operation, which consists of total expiration of the gland with its capsule, a portion of the bladder wall and the seminal vesicles. I have one patient operated four years ago by this method with a very gratifying result, the history of which I have already reported. In a large proportion of these cases as I have already stated, the only aid we can render is palliation for the relief of a distended bladder or the pressure of the neoplasm upon the nerves.

ADDISON'S DISEASE WITHOUT PIGMENTATION. REPORT OF A CASE WITH AUTOPSY *

HARRY B. SCHMIDT, M.D.

Instructor in Clinical Microscopy, University of Michigan. (From the Medical Clinic, University Hospital, Ann Arbor, Michigan.)

The patient, Mr. P. K., laborer, age 32, entered the University Hospital, August 20, 1913. As the patient was a Greek and unable to speak English, the history is rather uncertain. All that could be obtained was that he had been sick in Detroit before he came to the Hospital. He complained of severe headache and diarrhea, because of which he had to quit work and was confined to his room for four days. He was then taken to the Marine Hospital, where he stayed eighteen days and was then dismissed as well. While in the Marine Hospital he had a very severe epistaxis. For a time after his dismissal from the hospital he felt fairly well but complained of being extremely weak and had several fainting spells. Since August 17, he has become much worse, has had very severe headaches, does not remember of having had chills, complains of feeling very hot and having pain in the splenic area and to the right of the umbilicus. He is greatly constipated. He does not remember having seen any blood in his stools.

The patient looks very sick and is apparently slightly chilly. His pulse is small, quick and frequent, but not dicrotic. His tongue and mouth are clean, his throat not reddened. The thorax moves well; breath sounds are clear and the heart sounds approach tic tac rhythm. The patient rests with his knees drawn up. The abdomen is rigid and below the level of the ribs there is no distention. The spleen is firm and easily palpable, and there is considerable gurgling in the abdomen. No generalized or local tenderness can be made out, although the patient points to the abdomen with motions of distress. Rose spots were looked for on several occasions but never found.

On August 24, a Widal in 1-10 dilution was positive in twenty minutes. Widal in 1-50, no clumping in one hour. On the 25th., the Widal in dilution of 1-30 clumped in twenty minutes.

The temperature at the time the patient entered the hospital ran between 100.4° - 102° with pulse between 96 and 102. Respirations were 24-28. The patient had seven stools on the first day of entrance, afterwards the bowels were moved by enema. For four days after entering he ran a continuous irregular temperature up to 102.8°. On the 5th day his temperature fell to normal and on the 4th of September his temperature became subnormal, ranging between 96° and 99° by rectum. His pulse after the temperature fell ran between 78 and 88. His temperature remained subnormal until the day before he died, when it arose to 102.6° by rectum. During this time his mental condition was apathetic at all times, but occasionally he had hallucinations of sight with mild delirium. For two weeks his pulse was of very low tension, very small and at times was imperceptible at the wrist. His heart sounds were very faint and approached tic tac rhythm. Most of the time, the sight of food seemed distressing to him and for two weeks

* Read before the Clinical Society of the University of Michigan, October 1, 1913.

before his death he refused almost all nourishment taking only an occasional spoonful of milk or albumin water. The urine examination was negative. Blood examination showed 5,290,000 red cells, 7,100 whites and hemoglobin of 90%. Stools were negative. The systolic blood pressure taken on the 14th of September was 65.

An early diagnosis of typhoid fever was made because of the positive Widal in dilution of 1-30 in twenty minutes and he was treated as a frank case of typhoid fever with a post-typhoidal psychosis up to the day he died. No blood cultures were taken. However, in view of the low blood pressure, retracted abdomen with peculiar onset, and prolonged subnormal temperature, a final diagnosis of miliary tuberculosis with involvement of the adrenal glands was made before the autopsy, in spite of the fact that no pigmentation of skin or mucous membranes could be found.

The autopsy disclosed caseous tuberculosis of the mediastinal lymph nodes, extensive pleural adhesions, small heart with brown atrophy and fatty degeneration. There was enlargement and hyperplasia of the spleen, hyperemia and enlargement of Peyer's patches, enlargement of the retroperitoneal glands and mesenteric lymph nodes and caseous tuberculosis of both adrenals. No disseminated tubercles were seen in the liver, spleen or kidneys nor in other parts of the body. Examination of the brain was negative.

It has often been noted that Addison's disease without pigmentation usually runs a rapid course, as was the case with our patient. The enlargement of the spleen is rather uncommon in this condition.

In conclusion: A patient sick in the Hospital for thirty days and indisposed for some time before this was believed to have typhoid fever. On account of a prolonged subnormal temperature and low blood pressure together with other atypical manifestations the diagnosis was ultimately changed to Addison's disease without pigmentation and this diagnosis was confirmed at autopsy.

DISCUSSION

DR. JAMES H. AGNEW: I saw this patient early in his febrile period. A Widal in dilution of 1-10 was positive, and 1-50 negative. Later on another Widal was taken and a dilution of 1-30 gave a positive reaction. As far as the Widal is concerned it is the custom in this laboratory to take as a standard a dilution of 1-50, which if positive should clump in one hour. We also generally take a 1-10 dilution, as a check for any gross error. In this case while a positive reaction in 1-30 dilution should not have been considered, yet every so often in early typhoid, we find these beginning reactions.

I did not see the patient after that, but upon my return, was told he died of Addison's disease. The most significant feature of this was the absence of pigmentation, which may not be extensive but is practically always present at some stage of the disease. We often find other signs and symptoms in Addison's lacking but the pigmentation can generally be depended upon.

As regards the diagnosis of miliary tuberculosis, I would say that the physical signs in the chest were negative. No X-ray was taken because the physical examination did not indicate it.

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NOVEMBER

Editorials

REFRACTION BY THE GENERAL PRACTITIONER.

The doing of refraction work by the general practitioner, as advocated by the late Leartus Connor, is a move in the right direction and should not be abandoned now that its champion is no more with us.

Dr. Connor's idea was that the general practitioner, the family physician, should do more refraction work and thus turn aside a great deal of this work from the optometrist back into the physician's care where it rightfully belongs.

The family physician, by a very little extra qualifying, would be able to do the simpler refractions much better than the average optometrist does them and would also recognize other conditions in the patient, evidenced by eye symptoms, which need treatment and which the optometrist does not recognize because he knows nothing about them. The early recognition of these conditions and their prompt treatment are of vital importance to the patient.

A very lengthy article could be well written upon this subject and only fairly cover the text without going into details.

Some general practitioners have taken up the work as Dr. Connor urged and are doing it very well. Some, however, are not doing it well enough. Some simple points that are very important are being neglected.

Doing a refraction is not a simple affair of five minutes. Especially is this true when the patient is a child or adolescent.

Many Hyperopes will say that they see better when minus lenses are placed in front of the eyes being tested. Don't put minus lenses on a Hyperope. If the refractionist is satisfied with manifest refractions he is liable to do this.

Here is a simple fact that will often prevent the making of this mistake. A Myope can *never* see 20/20 without his correction. A Hyperope very often can see 20/20 without his correction.

If the patient can see 20/20 or any letters in the 20/20 line on the test type card and states that he can see better with — 0.50 D.sph. and sees worse with + 0.50 D sphere, it should not for a moment be accepted that he is a Myope. He is not. And if the muscles of the accommodation cannot be made to relax by the fogging system used at the office, atropin should be used sufficiently unless contra-indicated and a second refraction done in a day or two. Then it will be done right; and it is surprising how many Hyperopes will be found who appeared Myopic on manifest refraction.

The number of Hyperopes found wearing minus lenses and the number of astigmatics wearing spheres instead of cylinders, are reproof to hasty refraction work. And they are not *all* to the responsibility of the optometrist and the family physician refractionist. The careless oculist supplies a generous share.

V. A. C. CHAPMAN.

WHY, WHAT AND HOW SHALL WE READ?

The trite saying that a man is known by the company that he keeps may be altered, in a measure, to apply to our profession and thus cause us to say: A doctor is known by his library and reading. The poorest doctors, as a rule, are those who depend solely upon their own observations, their own experiences and their own studies. No man can pursue a cloistered existence and be broad, abreast of the progress of the times, in the van of his profession or belong to the class of modern physicians and surgeons.

It is necessary for every physician to be conversant with the experiences, the thoughts, the studies and investigations of his co-workers. This is absolutely essential in order that he may be enabled to enjoy intellectual broadness

and unbiased or mature judgment. To become broad-minded and to possess the ability to think logically and soundly demands that the doctor must devote time and study to the cultivation of these desirable qualifications.

How may our time be best employed in order that we may attain this mental development and training? First: Attendance upon local, state and national medical meetings and the active participation in the deliberations of these organizations. Second: By pursuing from time to time, post-graduate work in some recognized clinic or laboratory. Third: By well planned reading. All three of these means are essential; the first as well as the last and the second as well as the other two; we cannot afford to slight or neglect one of them. It is our intention in this article to only enlarge upon the third requisite: well planned reading.

To progress uniformly, to progress intelligently, to progress steadily one must be conversant with medical literature. He who fails to devote a certain amount of his time to daily reading need never expect to gain a place in his profession that will cause others to respect or seek his opinion.

We admit that there is so much that is written that even though a man does spend an allotted time each day in reading, it still would be impossible to cover the field. How then may we best proceed so as to secure the greatest good and cover the most essential subjects? The following suggestion is advanced as a tentative plan that may be enlarged upon or altered as the individual may determine:

The young graduate, entering into practice, has devoted the majority of his college years to the reading and studying of text-books. From them he has obtained much that he knows and to them he has been accustomed to turn when in search of information. This man must now learn that from now on his text-books must gradually be relegated further and further in the back-ground. Text-books will only possess for him a certain measure of future value and while it is well from time to time to purchase a new edition in order that we may remain conversant with the teachings of certain groups of present day teachers, yet we cannot help but admit that in this present day of progress and rapid advancement the new text-book of today in from three to five years will cease to be accepted or classed as an authority. He who is limited in funds will do well to invest but little in text-books, for in all too short a time they will be found without intrinsic or ultimate lasting value.

In the line of text-books, we believe that monographs are of very appreciable value. Their contents is based upon the author's personal experience, investigations and studies. As such they have distinct authoritative weight; they exert a broadening influence upon the reader's mentality; they enable one to become intimately familiar with the opinions and experiences of a recognized leader and authority. One cannot read Cushing's recent monograph, giving as it does such a mint of information that has been developed from the author's personal work and experiments, without deriving therefrom great profit. This is but an illustration; there are numerous equally valuable monographs. Time spent in reading and studying them will be well invested and productive of educational results to the reader. They add to the value of one's library.

In addition to the foregoing what other sources are there for pursuing a well planned course of reading? The Medical Journals.

Here, many of us are short-sighted and careless. The field is large and we unthinkingly select and subscribe to one, two, three, or possibly five and maybe ten journals. They come to our desk; often they remain unopened; possibly we may read their table of contents. In time, when the pile occupies too much room on our desk or floor, some one is employed to cart them off to the paper dealer. Time, money, valuable literature are wasted through such procedure and naturally we say that we subscribe to three, five or ten journals but derive no profit therefrom. How can you expect profit to be derived through such procedure? A system must be adopted in order that you may receive the greatest good from your journals.

Our time is admittedly limited and it is essential that some definite course must be determined upon if we ever hope to realize the greatest benefit and intellectual advancement from our journals.

Everyone, no matter whether he be specialist or general practitioner, should subscribe to the recognized national journal, *The Journal of the American Medical Association.* First, because of the many valuable articles that it contains and secondly because we should maintain an interest in and be associated with national organization work and propagandas for public as well as professional advancement and betterment. By the reading of this journal one may also remain informed as to the transactions and deliberations of national bodies and medical news in general.

Practically every special branch or department of our profession has a national journal, of excellent reputation, devoted exclusively to the publication of articles bearing upon their particular specialty. He who is engaged in any special field of work will find it to his interest to subscribe to one or in some instances two journals that cover his particular field.

Then there are several excellent journals that are devoted to reporting the work that is being done in research and experimental medicine and

surgery. The cultivation of the habit of being conversant with the progress and results of workers in experimental medicine will be inducive to our mental broadening. Time should therefore be allotted to the reading of one such journal.

No matter what our particular field of work may be we should all read with persistent diligence some journal that exclusively covers the field of internal medicine.

With one exception, most of these journals are published monthly. The devotion of an hour or two each day will suffice to enable one to read these journals, digest what we have read and apply our newly acquired knowledge and information in our daily work.

Having read our journals what shall we do with them? But one thing--save them carefully and upon the completion of a volume have them bound. The cost of binding a volume is nominal. The possession of these bound volumes will supply us with: first, excellent reference books; second, they will be of wonderful assistance in our medical writings; third, we will be possessed of a permanent record of medical progress. A card index of their contents may be readily perfected so that any given article or subject may be turned to in but a moment's time. As the years pass the increasing number of these bound journals will raise the value of our library and will cause us to feel a pardonable pride in them. But, more than this, we will have increased and broadened our mental faculties and developed to an extent so that our judgment, our opinions, our advice and our work will be respected by our fellow workers.

A doctor cannot afford to carelessly pass this matter of his readings and his library.

A UNIVERSAL FEE SCHEDULE. WORKINGMEN'S COMPENSATION ACT.

At the Annual Meeting of the Michigan State Medical Society held in Flint on Sept. 4 and 5, the following resolution was introduced:

RESOLUTION.

"Whereas, Act Number 10 of the Public Acts of the Extra Session of 1912 provides that the Michigan Industrial Accident Board shall have supervision over the charges made by the physicans for the services rendered injured employees in the state, and

Whereas, the Michigan Industrial Accident Board regards as advisable the establishment of a schedule of fees, covering this class of service, and

Whereas, the physicians of the state can with much more fairness and with more probability of securing the universal adoption of said schedule of fees, establish this standard of charges, than could the board of laymen,

Resolved, that the president of the Michigan State Medical Society appoint a committee of five for the purpose of establishing a schedule of fees for the surgical care of those injured employees who come under the Workingman's Compensation Law, and be it further

Resolved, that this Committee confer with the Industrial Accident Board and various claim adjusters of this state with a view of securing as far as possible a harmonious and equitable adjustment of this matter and report the results of their labors through the columns of THE JOURNAL of the Michigan State Medical Society."

It was supported by Dr. Tibbals of Detroit and Dr. Hume of Owosso, and duly carried.

The President appointed the following committee in accordance with the above resolution:

Bret Nottingham, Lansing, Chairman.
C. H. Hitchcock, Detroit.
C. F. Baker, Bay City.
C. T. Southworth. Monroe.
F. C. Warnshuis, Grand Rapids.

The Chairman of the committee herewith submits his report as provided by the resolution.

A UNIVERSAL FEE SCHEDULE

WORKINGMEN'S COMPENSATION ACT.

September 25, 1913.

Dr. F. C. Warnshuis, Sec. of the Michigan State Medical Society, 91 Monroe Ave.,
Grand Rapids, Mich.

Dear Doctor:—The committee appointed by the President of the Michigan State Medical Society at the Flint meeting, met on September 23rd in Detroit with a similar committee appointed by the Casualty Claim Men's Associaton for the purpose of agreeing upon a schedule of fees governing the services of physicians practicing under the terms of the Workingmen's Compensation Law.

There was only one absentee in either committee.

During the general discussion it was decided that the basis for fixing the fees should be the average charge made to the average workingman for a similar service.

In fixing the schedule the fact that physicians are guaranteed an immediate settlement for three weeks' medical service in every instance in which an employee who comes under the terms of the Compensation Law is injured, was also taken into consideration.

The schedule of fees which most of the liability companies in the State of Michigan have used was then taken up for discussion and when finally adopted it was found that the fees had been raised in twelve different items and lowered in none.

I herewith hand you a copy of schedule as unanimously adopted by the members of the two committees for publication in the Journal as provided in the Flint resolution.

It is the earnest desire of the members of the medical committee as well as the Casualty Claim Men's Association that the physicians throughout the state recognize this schedule of fees as a standard in charging for services rendered injured employees in the future.

Considerable friction has been engendered between the Industrial Accident Board and certain physicians because of disputes concerning physician's fees and the recognition and adherence to this schedule will avoid this unnecessary and disagreeable feature, in the future.

In Massachusetts this dispute came to such a crisis that the Governor of the State was forced to take a hand and appointed a commission to fix a schedule of fees binding physicians within certain limits in the matter of charges. It is hoped that this or any other similar drastic measure can be

avoided in Michigan through the co-operation of the profession

Your committee has given this work their most careful study and we trust that the result may be acceptable

Sincerely yours,

BRET NOTTINGHAM, CHAIRMAN.

"Sec. 4. During the first three weeks after the injury the employer shall furnish, or cause to be furnished, reasonable medical and hospital services and medicines when they are needed." From Workingmen's Compensation Act.

MEDICAL FEE SCHEDULE

Dressings, etc.

	First Aid	Subsequent Aid
Ordinary day visit, not necessitating antiseptic dressing	$1 50	
Visit necessitating and including antiseptic dressing	2 00	$1 50
Visit including both antiseptic dressings and necessary operative procedures in ordinary cases of contusions, lacerations, incisions, punctures, etc.	3 00	1 50
Night visit—9:00 P.M. to 7:00 A.M.	2 50	
Office examination and report—ordinary	2 00	
First attention at office, including operative procedure and dressing of ordinary wound	1 00 to 2 00	1 00
Removal foreign body from conjunctive	1 00	1 00
Removal foreign body from cornea	2 00	1 00
Office dressing ordinary wound	1 00	1 00

Amputations

	First Aid	Subsequent Aid	
		Hospital or Home	Office
Hip joint	$75 00	$2 00	$1 00
Thigh at any point	50 00	2 00	1 00
Leg or foot	25 00	2 00	1 00
Shoulder joint	40 00	2 00	1 00
Arm or forearm or hand	25 00	2 00	1 00
Metatarsal or metacarpal, single	10 00	1 50	1 00
2 or more	15 00	1 50	1 00
Fingers or toes, single	5 00	1 50	1 00
2 or more	10 00	1 50	1 00

Fractures

	First Aid	Subsequent Aid	
		Hospital or Home	Office
Upper arm	$20 00	$1 50	$1 00
Forearm, one bone	10 00	1 50	1 00
Both bones	12 50	1 50	1 00
Femur	20 00	1 50	1 00
Lower leg, one bone	10 00	1 50	1 00
Both bones	15 00 to 20 00	1 50	1 00
Jaw	10 00	1 50	1 00
Ribs, one or more	5 00	1 50	1 00
Patella	15 00	1 50	1 00
Pelvis	15 00	1 50	1 00
Metatarsal or metacarpal	5 00	1 50	1 00
Finger or toe	3 00	1 50	1 00
Two or more	5 00	1 50	1 00
Scapula	10 00	1 50	1 00
Clavicle	10 00	1 50	1 00
Nasal bones	5 00	1 50	1 00
Compound fractures—add 50 per cent. for first aid only		1 50	1 00

Dislocations, etc.

	First Aid	Subsequent Aid	
		Hospital or Home	Office
Shoulder	$10 00	$1 50	$1 00
Elbow	10 00	1 50	1 00
Hip	20 00	1 50	1 00
Knee	10 00	1 50	1 00
Ankle	10 00	1 50	1 00
Wrist	5 00	1 50	1 00
Finger	2 00	1 50	1 00
Jaw	5 00	1 50	1 00
Trephining Skull	25 00	1 50	1 00
Ligating important arteries	10 00	1 50	1 00
Reduction of ordinary hernia when due solely to recent injury, and applying truss	5 00	1 50	1 00
Reduction of strangulated hernia by Taxis	10 00	1 50	1 00
Herniotomy	30 00	1 50	1 00
Enucleation of eye ball	25 00	1 50	1 00
General anaesthetic	5 00		
Complete physical examination and report	3 00 to 5 00		
Autopsy—complete with written report	25 00		
Attending but not performing	10 00		
Testimony in Court as to simple fact of injury	10 00		
Expert testimony	15 00 to 25 00		
Passing Catheter	1 50		
X-Rays (to be taken only upon orders by the Company)	$5.00 to $10.00		

Country Calls

Fifty cents per mile beyond city or village limits, one way.

IMPORTANT.

It is absolutely necessary that all bills to employers or insurance companies in compensation cases be itemized, setting out the date of each visit and the charge for the same.

COMMENTS.

The following comments upon the work of this Committee is deemed essential and desirable in order that our members may be in possession of all the details that called for the above action.

The absolute necessity of adopting some schedule that would govern the charges made for medical and surgical service to an injured employee of an employer who had elected to come under the working of this law became apparent very soon after this law was in effect and active. The matter has been held in abeyance in order that those who were more intimately interested in and associated with the administration and enforcement of this law might be enabled to give this matter their careful and mature attention and judgment. Sufficient time has, however, now elapsed so that just conclusions can be drawn and expressed.

The profession has during the past year been the source of greatest difficulty and annoyance to the Industrial Accident Board and adjusters of the various insurance companies by reason of the great variance in the bills that have been rendered for services in given instances. This disparity in the charges made has been from $5.00 to $50.00 in numerous instances.

Certain physicians have endeavored to wrongfully derive personal profit through the administration of this act. Others have rendered statements wherein the *entire* surgical and medical fees have been incorporated in the first three weeks' attendance. Again there have been those who have failed to

itemize their statements. Lastly, bills have been "padded" in many minor cases.

These are but a few of the instances that have been the cause of difficulty and the source of annoyance to the Industrial Accident Board, Insurance Companies, employer, employee, as well as the doctor.

In other states where similar laws have been enacted the same difficulties were encountered and these states finally, through a conference attended by all the interested parties, agreed upon and adopted a uniform schedule of fees that was to serve as a precedent in determining proper and reasonable charges for services rendered in given cases by the physicians and surgeons.

Guided by the experiences of these sister states, the representatives interested in the workings of the Michigan law requested a like conference with representatives of our profession. This was secured by the above resolution; the conference was held; the above Fee Schedule was concurred in and the committee unanimously recommend it to the profession of the state.

There is no doubt but what there will arise certain protests and objections from a few of the doctors in the state. However, if one will but devote a little time to carefully study this schedule he will, we believe, soon perceive its fairness and justness as well as liberality and then realize that this schedule will enable him to secure a very reasonable renumeration for all the services that he may render under this law's provisions.

It is sincerely hoped that those who render medical or surgical attendance to injured employees will be guided by this schedule when the time comes for the rendering of their itemized statements. By so doing they are assured of prompt payment of their accounts and they will obviate all disputes.

It must be remembered that the Industrial Accident Board is empowered to audit all charges and to allow or dis-allow any and every claim. Their decision is in a measure final and appeal of last resort can only be made to the Supreme Court.

It is the opinion of the Committee that the interests of the profession have been safe-guarded and provided for and they, therefore, recommend and endorse this schedule.

COMMITTEE APPOINTMENTS

The Committee appointments for the ensuing year, as determined by our president, Dr. Guy L. Kiefer, will be found in the front form of THE JOURNAL in connection with the rostra of the other officials of our organization.

The members whose names are there published as chairman or members of the various appointive committees are respectfully requested to accept this method as official notification of their appointment and to govern themselves accordingly.

Membership upon any given committee carries with it the understanding that each committee will conscientiously devote their time and efforts towards accomplishing the work that may be assigned to their committee. There is a fertile field for every committeeman to become active in and it is to be hoped that when the time arrives for the rendering of an annual report that these committees may be enabled to outline many features that have been promulgated and carried to successful consummation.

Editorial Comments

This issue contains an advertisement in which the advertiser is putting up to our readers the statement made to him by the editor. You are asked to peruse our advertising pages and then lend your individual co-operation to at once convince this business man that advertising in the Journal pays. Do it now and thus help build up your publication.

The attention of our members and officers of county societies is drawn to the following important extracts that are taken from the report of the Committee On Fee Splitting:

The Michigan State Legislature, at its last session, made this and allied forms of graft offenses. Senate Bill 489 has the following pertinent wording. (Section 3, Subsection 6.)

"The board of registration of medicine may refuse to issue or continue a certificate of registration or license . . to any person guilty of grossly unprofessional and dishonest conduct. These words, 'unprofessional and dishonest conduct,' as used in this act, are hereby declared to mean . . . employing or being employed by any capper, solicitor or drummer, for the purpose of securing patients . . . or the division of fees in a consultation or a reference of a patient to a specialist, when no actual professional service is rendered by the physician referring the case, without the knowledge of the patient or the person concerned in the payment thereof."

To your committee it seems fitting that the Michigan State Medical Society should forthwith put the stamp of disapproval and condemnation also on this form of division of fees which has brought shame on the splendid body of medical men in our state.

We, therefore, offer the following resolutions for adoption:

Resolved, That any member of the Michigan State Medical Society found guilty of secret fee-splitting or of giving or receiving commissions shall cease to be a member of the Michigan State Medical Society.

This recommendation and resolution was adopted by the House of Delegates at the Flint Meeting. It is therefore incumbent upon the officers of the county societies to enforce the observance of this enactment in so far as it pertains to the members of their society. We again urge that the full report of the committee

Copyrighted by Surgery Pub. Co. THE INJURED FINGER. Photo by Conyers.

By reason of the kindness of the editor of the *American Journal of Surgery* we are enabled to present our readers with this reproduction of the original photograph—"The Injured Finger."

It has been a very, very long time since we have seen a photographic study that is so natural, so appealingly human and filled with so many characteristic expressions. Note the expression of pain, distress and fear on the face of the patient; that of curiosity and sympathy on the faces of his two "Pals." The doctor is in himself a study and representative of a type of physician of which the entire profession is proud.

All in all, this group, composed of the doctor and the trio of street gamins is one which we feel will be a source of delight to every one of our readers.

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be read at the next meeting of each county society.

The full benefits obtainable through organization efforts will not be realized until the majority of the reputable members of the profession in Michigan become affiliated with our State Society.

To accomplish this it is the duty of every member to put forth the effort that will result in securing the enrollment of every eligible physician in his community as a member. We are requesting that each county organization make it a point to secure the co-operation of its entire membership body to the end that the first of the coming year will see the eligible doctors in every community members in good standing in their county and state medical society. The exhibition of a little concerted action on the part of our members in the various county organizations will enable them to attain this desired end. Will you not put forth the effort to accomplish this?

The Council, in its annual report to the House of Delegates, made the following recommendation:

"At the present time THE JOURNAL is receiving from its advertisers $300 per issue. Previous to this year the receipts have averaged from $150 to $160 per issue so that for the first time advertising receipts now exceed the cost of publication. The ambitions above outlined for THE JOURNAL depend upon maintaining this increased advertising patronage. This can only be done if our members give preference to our advertisers when buying their sup-

plies—prices being equal—and also in corresponding with advertisers to always mention THE JOURNAL. If our members will get the habit of considering themselves personally interested in the financial welfare of THE JOURNAL, the work of the Secretary will be much lessened."

The Publication Committee is actively engaged in the work of getting out a more valuable and helpful JOURNAL. The addition of new features as well as the increasing of the number of original articles in each issue create an increased publication expense. As has been stated before, the expense of publication is greater than the revenue derived from subscriptions and the deficit incurred must be defrayed by means of advertising receipts. To secure and maintain in force advertising requires that the advertiser receive a fair return for the money he invests. The amount of patronage which they are to receive is determined by our readers.

Therefore, we again desire to impress our members with the following duty that rests upon them: Patronize our advertisers. Tell them why you are doing so. If each member would but observe this request the Publication Committee will have the privilege of sending out each month a better, more valuable, interesting and instructive JOURNAL to our members.

Make it a point to read every advertisement in each issue and then go one step further and answer them by conferring your orders upon these business men who are making the JOURNAL possible. This is a matter of vital importance and we urge that you give it your careful consideration.

Several of our readers have expressed their approval and appreciation of the Clinical Case Reports that have been published in previous issues. They have also made the request that this feature of THE JOURNAL be made still more prominent. We shall always be glad to publish every case report that is sent to the editor. The number that are published each month will be determined by our members. In order that we may be enabled to meet the requests and desires of our readers may we not be favored by being the recipient of a goodly number of Clinical Case Reports?

The winter months, bringing as they do increased demands upon the time of the doctor, often occasion our permitting ourselves to neglect the duty we all owe to our County Society. We are at times too prone to offer the excuse—"Too Tired" and thereby seek to excuse our neglectfulness. A couple of hours spent in attendance upon your society's meeting and the social mingling with your fellow practitioners will prove to be a restful change and what is more—you will be a better doctor. Will you not prove our assertion and comply with this suggestion? Make it a point to attend your next county meeting.

The Journal of the Illinois State Medical Journal is showing a very apparent improvement since its change in editorial management. Representative as it is of the largest state medical organization in this country we are naturally prone to turn to its official publication for information as to the results attendant upon its organization efforts. We shall watch with interest the results that are bound to attend the efforts of the officials of the Illinois State Medical Society in their present endeavor to perfect the work of their state organization.

The preparation that has been made for the entertainment and care of the visitors in attendance upon the Fourth Session of the Clinical Congress of Surgeons to be held in Chicago November 10-16 warrants the prediction that this will be a very valuable and instructive meeting and one which no surgeon can very well afford to miss. The benefit derived by reason of attendance upon the various clinics will repay every Michigan surgeon for the time thus spent. A complete program of all the clinics that will be held may be found in the November issue of Surgery, Gynecology and Obstetrics.

On the evening of November 13, 1913 will be held the first formal meeting for the conferring of fellowships on the members of the American College of Surgeons.

Sir Rickman Godlee, the President of the Royal College of Surgeons of England, will deliver the principal address and extend, officially, greetings to our new organization from the Councillors of the Royal College of Surgeons.

President J. M. T. Finney will deliver the presidential charge, and formally confer the fellowships on all members of the organization who have qualified. Honorary fellowships will be conferred on a small number of foreigners and Americans whom the Board of Regents have selected as worthy of such distinction.

Every qualified member of the organization should make an effort to be present at this convocation, as the Board of Regents is anxious to make the occasion one of impressiveness and dignity in keeping with the far-reaching importance of the organization.

About thirteen hundred applications for fellowship in the American College of Surgeons have been filed with the secretary. Of this number of applicants only about ten hundred

have fulfilled all the requirements in filing their application blanks.

The Board of Regents approved about four hundred men at its Minneapolis meeting. Three hundred additional have been favorably passed upon by the General Committee on Credentials and will be recommended to the Regents for final approval at their next meeting in October.

Too many of the applicants have been careless about filing their preliminary papers. This causes delay in consideration of the prospective fellows' availability by the Committee on Credentials and hence surgeons are urged to complete and file all declarations and other papers as early as possible.

There is an inclination on the part of some men to take it for granted that certain groups of members should be exempt from filing declaration blanks and giving date and references. The Regents have ruled that all applicants shall file the same papers and be submitted to the same scrutiny before they can be recommended for fellowship.

The work of scrutinizing each application and verifying all references on the part of the Committee on Credentials takes much time, hence, prospective fellows must not become impatient if the announcement of their acceptance is delayed.

Deaths

ADOLPH HOCHSTEIN, M.D.

The professional experiences of the eminent medical practitioner at Kalamazoo, Michigan, who is the subject of this sketch, have been unusual from an American standpoint. Many advanced physicians go abroad to finish their medical education. The entire training of Dr. Hochstein was received abroad. He is a graduate of one of the most celebrated foreign universities. He practiced his profession in Germany, and served as a surgeon during the Franco-Prussian war.

Doctor Hochstein was born in eastern Prussia March 13, 1845 and received his education in his native land. He was a student at the college of Hohenstein and Elbing, and graduated at the latter institution in 1866. The same year he entered the Medical Department of the University of Berlin, and completed its four-years course in 1870, receiving his diploma that year. The young physician was appointed Assistant Surgeon in the Prussian army, and served during the sharp and decisive war in which his native land soon after became involved with France. After the close of that war Doctor Hochstein began the practice of his profession at Berlin. He remained there until 1874 and in that year migrated to the United States. For about a year and a half he practiced at Grand Rapids, Michigan, and in 1876 he removed to Kalamazoo, where he has since been engaged in general practice and where he has attained a high professional standing in discharging the duties of an influential and absorbing practice. He is a prominent member of the Kalamazoo Academy of Medicine and has served one term as its president. He has been appointed health officer of Kalamazoo five terms.

Doctor Hochstein was married in Berlin in 1874 to Miss Henrietta Bomster, a native of Prussia. To them have been born two daughters, Amelia and Clare.

IN MEMORIAM

"Abstract from remarks by Rev. Caroline Bartlett Crane at the funeral of Dr. A. Hochstein, where she officiated on account of the absence of the Rabbi."

Speaking of Dr. Hochstein as a physician, Mrs. Crane said, in part:

Dr. Adolph Hochstein's long life lived in our midst is the real address to our hearts on this occasion. Nearly forty years ago he came to this city, as a young man of fine abilities and of extraordinarily good training in a German university and in the Franco-Prussian war.

I think it can truly be said of Dr. Hochstein that never has a man practiced medicine in this community with higher deals of professonal and human service. His reward has been the confidence and real affection of his fellow practitioners, the devoted love of the families to whom he has ministered even to the third generation, and the consciousness of unworldly and single hearted devotion to a profession which, as he practiced it became a ministry to both the bodies and the souls of the afflicted.

Dr. Hochstein at one time served this city as health officer, giving far more of his time and energy than he was compensated for. He was always practically interested in the promotion of public health and the general civic welfare.

I am glad that the kind words and wealth of flowers which come from the members of the Kalamazoo Academy of Medicine today are not belated tributes, therefore tinged with regret and shame. They but re-echo and confirm the splendid honors which were paid Dr. Hochstein at the Academy banquet given in his honor more than a year ago when he was still in the strength of his prime.

Dr. Hochstein's life has been one of noble service, and his death translates a warm human friend and fellow-worker into an ideal and inspiration for the years to come.

County Society News

BAY COUNTY.

The September meeting of the Bay County Medical Society took the form of a clinic, which was held at Mercy Hospital, Bay City, on Sept. 23rd at 2:30 P.M.

Dr. Daniel LaFerte, of Detroit, assisted by his son Dr. Alfred Daniel LaFerte, gave a clinic on Orthopedic Surgery. A number of cases were shown for diagnostic purposes, after which a number of cases were operated. Twenty-five members of the society were present.

In the evening, at 6 o'clock, a complimentary dinner was given the guests at the Bay City Club, after which Dr. Daniel LaFerte gave a short talk on some phases of the operative work. He presented a number of photographs in illustration.

The Bay County Medical Society met at 8 P.M. on Oct. 7th at the residence of Dr. C. W. Ash, 2125 Center Ave., Bay City. After a short business session, at which the name of Dr. Geo. E. Orth of Linewood was presented for membership, the Society listened to a paper on "Caesarean Section" by Dr. W. R. Ballard of Bay City. The doctor brought out the indications for the operation, showing that it is the operation of choice in many more cases than is at present recognized. He outlined

the technic and reported twenty-one cases. The paper was fully discussed.

Following the program the members enjoyed an oyster supper.

H. N. BRADLEY, M.D., SECRETARY.

GENESEE COUNTY

The bi-monthly meeting of the Genesee County Medical Society was held in the Masonic Temple, October 7th, at 8 P.M. The meeting was called to order by President Bates, thirty-two members being present.

A committee consisting of Drs. Bird, Clark and H. A. Stewart was appointed to investigate the registration of the drugless practitioners of Genesee County, as in accordance with the new Medical Practice Law.

PROGRAM.

Dr. H. A. Stewart gave a demonstration of a new technic for the Intravenous Administration of Neo-Salvarsan.

Dr. Manwaring reported a case of a successful operation of a child twelve weeks old with Congenital Stricture of the Pylorus, demonstrating the diagnosis with radiographs. The doctor illustrated an unusual case of tubercular hip with radiograph plates.

On motion the meeting adjourned.

C. P. CLARK, M.D., SECRETARY.

HOUGHTON COUNTY.

On Monday evening, October 6th, occurred the regular meeting of the Houghton County Medical Society. President W. T. S. Gregg presided and twenty-two members were present.

Dr. S. R. Edwards and Dr. Don C. Sutton, both of the Calumet and Hecla Staff, were admitted to our membership.

A paper by Dr. W. H. Dodge of Hancock on "The Use of Phylacogens in Therapeutics" was greatly appreciated. A good deal of discussion followed in regard to the practical use of this form of treatment. The doctor was very optimistic because, as he stated, he had accomplished results which heretofore had not responded to anything which he tried. The reaction in the experience of many was sometimes very severe. The concensus of opinion of those present was that the intravenous method of giving this treatment was inadvised. Reports from one physician of a few deaths having occurred by the intravenous method makes it very important that the heart be examined before treatment is started. On the whole, it is without question that the phylacogens have their place in therapeutics, even though a great deal may be said here and there against its usage.

The next paper was by Dr. G. M. Rees of Calumet, on "Meckel's Diverticulum." Should one take the time to look for this appendage in his abdominal surgery he will find the number quite few indeed. In the past year Dr. Rees had four cases. He removed the diverticulum in all four cases, and in two cases where pain in the umbilical region had been present for years, were entirely free of this discomfort after operation. The diagnosis of diverticulum before operation is hardly ever made. In a case of a persistent umbilical fistula, the diagnosis of diverticulitis was made where severe pain had occurred, and on operation the diagnosis was found to be correct, but, the doctor said that is the only case he has read of where a true diagnosis had been made.

One of the members present spoke of his experience in anatomy, where in ninety cases only four had a Meckel's Diverticulum. It would be interesting for surgeons to look for this diverticulum in any abdominal work.

The meeting was adjourned to the lunch room and all present were pleased with the evening's program.

R. LABINE SECRETARY.

INGHAM COUNTY.

Thursday evening, Sept. 18th, the regular meeting of the Ingham County Medical Society was addressed by Dr. Wilfrid Haughey of Battle Creek.

He discussed especially the phenomenon of paracusis, its etiology and the therapeusis of the associated pathological conditions. He stated that many cases of such deafness may be greatly helped or cured by daily applications to the drum of cantharadin in glycerin, by which a connective tissue forming reaction is provoked, which restores the lost tension of the drum and ligaments of the ossicles.

DR. HENRY S. BARTHOLOMEW, SECRETARY.

KALAMAZOO ACADEMY.

Regular meeting of the Academy was called to order Sept. 23, 1913, with Dr. C. E. Boys in the chair. Minutes of the previous meeting were read and approved. Dr. E. J. Bernstein, chairman of the Library Committee, mentioned the acceptance of the library of our deceased colleague, Dr. A. Hochstein, also he further called the attention of the Academy to the fact that the obituary of Dr. John Fletcher and Dr. A. Hochstein had not been inserted in the memorial records. As chairman of the Library Committee he was instructed by the Chair to complete the memorial records up to date. Dr. Bernstein further discussed the amount of dues paid to the State Society and that the Library Committee could use the fifty dollars that was previously voted for its uses. The question of the state dues created some discussion. The President emphasized the depleted state of the treasury and that our resources were inadequate to meet the legitimate needs of the society. Dr. E. P. Wilbur suggested that the Secretary collect $5.00 per annum per member for the Academy and let the State Society collect its $3.00 separately; the statements mailed to each member should specifically state the amount for the Academy and the amount for the State Society. Dr. O. H. Clark moved, Dr. E. J. Bernstein supporting, that a committee be appointed to confer with the Secretary and Treasurer to ascertain the annual expenses of the Academy, and to determine a just and adequate fee per member to meet the same and report on October 14, 1913. The President stated that there was one committee, namely the Budget Committee which had already performed this act in the year, and that the report of this committee was already on record, it having been acted upon and accepted by the Academy. The suggestion was approved by Dr. Clark and Dr. Bernstein and carried.

It was announced that the Academy would be relieved of the expense of printing the Bulletin in the future as The Upjohn Company had offered to do this.

Dr. E. J. Bernstein moved and Dr. C. H. McKain supported that the Academy approve of this arrangement and that the Academy appreciates the efforts of the Upjohn Company in its behalf. Carried.

Dr. F. E. Barrett stated that the First M. E. church

had refused to accept a fee for the use of the church for the lecture of Dr. V. C. Vaughan of April last, and offered as a resolution that the Academy should mail a communcation to the officials of this church in which there was expressed an appreciation for this courtesy. Seconded by Dr. Della P. Pierce and carried.

The President appointed Dr. G. F. Young of South Haven as a member of the Board of Censors to complete the unexpired term of our deceased colleague, Dr. A. Hochstein. Dr. R. E. Balch read the amendments to the by-laws of chapter 3, section 3, and chapter 4, section 1 of by-laws.

Amendments to the By-Laws.

Chapter 3, section 3, reads as follows: The Secretary shall be the chairman of the committee on program and scientific work, and Secretary of the Board of Directors. The amendment is to read, "The Secretary shall act only as Secretary of the Board of Directors."

Chapter 4, Section 1, reads as follows: There shall be a standing committee on program and scientific work, of which the Secretary shall be chairman. The amendment is to strike out the words, "of which the Secretary shall be chairman". Dr. Bernstein moved, Dr. Clark supporting, that they be adopted and carried.

The President instructed the social committee to act as committee on arrangements for the meeting of the Tri-State Medical Society which would occur in January. Though the annual meeting will occur on December 9, and there was a possibility of a change in the social committee that this committee could adjust itself accordingly.

There were thirty-three present at this meeting.

The minutes of the last meeting of the Academy is replete with evidence of the lack of resource to maintain the actual necessities of the society. The repair fund is exhausted but the improvements have not been completed. Sixty-eight members have not paid the special assessment. When these are in we can purchase the lantern and reflectoscope necessary to enable us to put in the programs material that now is not available because we lack sufficient equipment. Insertions will be found in the Bulletin of all members that have not paid their special assessment. *Fill out the blank. enclose the THREE dollars needed so badly and mail NOW.*

C. B. FULKERSON, SECRETARY.

KENT COUNTY.

The Kent County Medical resumed its regular meetings on October 8th with a goodly attendance. Several case reports were given by Dr. R. R. Smith.

Dr. Udo J. Wile of Ann Arbor was the invited guest, and gave a talk upon several forms of skin diseases and syphilis, basing his remarks upon clinical cases that were presented.

E. W. DALES, SECRETARY.

MONROE COUNTY.

The 18th Annual Meeting of the Monroe County Medical Society was held in Monroe on October 16th, 1913, at 2 P.M.

The following papers were read:

Typhoid Fever, by Dr. Roach, and another one by Dr. E. W. Kelley. The full report of the meeting and the reports rendered will be sent for publication in the November JOURNAL.

CHAS. T. SOUTHWORTH, SECRETARY.

MONTCALM COUNTY.

The Annual Meeting of the Montcalm County Medical Society was held at the City Hall of Greenville on October 9th, at 10:30 A.M. The following program was carried out:

1. Called to order by the President. Reading of Minutes of the last meeting.
2. Report of the Secretary-Editor.
3. Report of Delegates to the State Society.
4. Address of President.
5. Reception of Members and Communications.
6. Election of Officers.
7. Miscellaneous Business.
8. Clinics.
9. Paper—"Points and Pitfalls in Gynecology," by Dr. F. C. Warnshuis of Grand Rapids, Mich., Secretary of the State Medical Society.
10. General Discussion for the Good of the Society.
11. Adjournment.

The results of the election of new officers and the reports of the retiring officers will be prepared for publication in the November JOURNAL.

H. L. BOWER, SECRETARY.

OTTAWA COUNTY.

The Annual Meeting of the Ottawa County Medical Society was held in the city of Holland on October 14th, 1913 at 3 P.M.

The following program was carried out:

1. Call to order by President.
2. Reading of Minutes of last meeting.
3. Communications.
4. Report of Secretary.
5. Report of Treasurer.
6. Report of Delegates to State Society.
7. Address of President.
8. Election of Officers.
9. Miscellaneous Business.
10. Paper—"Decompression in Skull Fractures," by Dr. Frederick C. Warnshuis, Grand Rapids.
11. A Medical Letter from Honolulu sent by an army officer. Dr. Edw. Kremers, P. I.
12. Adjournment.

The meeting adjourned and at 6:30 the members in attendance, twenty-four, sat down to an informal dinner served in Hotel Holland.

After the dinner the members attended a public meeting in the City Hall, which was addressed by Dr. Guy L. Kiefer of Detroit, President of the State Society, who chose for his subject: "Guarding the City's Health."

H. J. POPPEN, SECRETARY.

SAGINAW COUNTY.

The monthly meeting of the Saginaw County Medical Society was held Friday evening, Sept. 19th, at he City Hall. A paper was given by Dr. W. R. Ballard of Bay City on, "The Caesarean Operation." Dr. Ballard has performed a large series of these operations, and gave us a splendid paper

Dr. Shawn, late assistant of Dr. G. W. Crile, was present, and addressed the Society on the "Prevention of Shock."

Dr. A. E. Leitch of Saginaw presented a paper on "Fractures."

Thirty-two physicians were present.

A. R. MCKINNEY, M.D., SECRETARY.

TRI-COUNTY MEDICAL SOCIETY.

The regular meeting of the Tri-County Medical Society was held in the Society's rooms, October 2d, 1913.

The program, a continuation of a symposium on Fractures extending through five successive meetings, consisted of a paper by Dr. W. B. Wallace of Manton; subject, Fractures, (a) Etiology, (b) Diagnosis, 1, simple, 2, compound, 3, complete, 4, incomplete. By Dr. B. H. McMullen, Cadillac, subject, Fractures, Continued, (a) Joint Involvements, (b) Complications.

The discussion of the two papers which followed evidenced the fact that the members of the Tri-County Medical Society are keeping abreast with the times; also that they are individual thinkers. At the close of this series of papers, the subject of Fractures will have been covered in detail. The value of the series is self evident.

A concise and interesting report of the Flint meeting was given by the delegate, Dr. O. L. Ricker. A large delegation from the Tri-County Medical Society may be looked for at the next State Meeting because of this enthusiastic report.

At the next meeting of the Society the subject of Fractures will be continued. Officers for the year 1914 will also be elected at this time.

RUDOLPH J. A. ODEN, SECRETARY.

WAYNE COUNTY.

The first meeting of the Wayne County Medical Society was held Monday evening and judging from the splendid attendance the meetings are going to be very popular this year. Dr. E. W. Haass, the retiring President, presented an earnest discussion of the year past and gave a number of excellent suggestions for the ensuing one.

He urges a free discussion and criticism of papers and suggests a historical evening, the adoption of a uniform pronunciation of words at meetings and a few public meetings later, for the public.

The surprising statement was made and attested by Dr. Tibbals that there were three hundred members of this society who have contributed not even one dollar to the building fund. The reason is given that they have not been personally interviewed Dr. Tibbals says that no one can rightly tell you what you can afford to give, but that each one certainly should do his little share—give something—payable in five yearly payments if you choose.

SECRETARY'S REPORT.

BY R. L. CLARK.

The total number of meetings held during the past year was 34, of which 15 were general and the balance were held by the surgical and medical sections. One hundred four was the approximate average attendance at the general meetings during the year.

There are 527 active members who have paid their dues to date and 47 delinquents. There were 44 active, 10 associate, and 3 transfer members admitted to the society during the past year. There have been 5 deaths and one has transferred to Colorado. There have appeared on the program men of state and national importance.

1. Fee splitting and the injurious effect it has on the profession and laity.

2. Revising of the constitution of the society as can be found in the Wayne County Medical Bulletin under date of November 25, 1912. The division of the office of secretary and treasurer, increasing of dues to cover necessary expenses for the coming year, etc., are some of the points of interest in the revision.

3. Auditing of all the society books by a special committee and the favorable report of the committee.

4. Adopting of a rule that the visiting nurse instill a 2% solution of silver nitrate into the eyes of the new born babe unless otherwise requested by the physician in charge.

5. The rendering of all possible aid by telegram, representatives, etc., in helping to pass laws in State Legislature of interest to the public and the profession.

6. The authorizing of the trustees to proceed to build a new auditorium at a cost not to exceed $25,000 and which is now under construction.

We should commend the retiring President and the Board of Trustees for the time and energy expended in the interest of the society. The editor should be congratulated for the good programs he arranged and thanked for the promptness in which he edited our bulletins.

For the coming year, we should begin at once to boost our society in every department. There are 200 or more legitimate practicing physicians in Wayne county not members and who should join our society during the coming year. An earnest effort on the part of each member of the society should be begun during the coming month to get as many new members as possible. Ask them to go to luncheons and meetings and extend to them the use of the library, etc. Every member signing a petition for a man to join the society should first be sure he is a proper man to become a member of this society.

There have been formed on the east and west sides of the city societies composed of prominent practicing physicians, who ars trying to increase the fees charged. They are going further than that—they are trying to establish a credit system like the various business firms have, whereby we can know the people who make a practice of jumping their doctor bills and then laughing at the doctor when he tries to collect. I believe it is the duty of every member of this society to join these societies according to the neighborhood in which he lives. I hear many present say, "A great thing, but it can't be done." Yes, you were the same ones that said we would never have a society home, but a few men banded together and proved it could be done. Every physician, for his own interest, should be found in the "do" instead of the "can't" column.

When we get into our new auditorium we should have a much larger attendance than we now have. We need the help of every physician in this county. The young physician should be helped and encouraged to join with us and become a regular attendant.

The new auditorium will cost between $25,000 and $30,000. Going directly back through the main hall of the present building a few steps lead down to the ground level, where the loby, coat and toilet rooms will be located, then on and up two or three steps, where the auditorium is reached. This is built so that it is just as accessible from the outside and with the idea of renting it for the revenue from other organizations. The library rooms on the second floor will hold about 40,000 volumes and will be found a greater convenience as time passes.

After a short talk by Dr. Tibbals, describing the new auditorium and the finances, Dr. Ray Connor, as chairman of Program Committee, Dr. Warren Babcock of the House Committee, and Dr. Hitchcock of the Library Committee reported. Dr. Longyear of the Board of Trustees urged everyone to do something to help decrease the small remaining debt.

It is regretted that Dr. Hirschman's report as delegate to the American Medical Association can-

not be published. It will be found in the library and is very interesting reading.

The regular meeting of the medical section of the Wayne County Medical Society was held Monday evening, October 6. Approximately seventy-five members were present. Dr. W. D. Ford occupied the chair, J. H. Dempster, Secretary.

The program consisted of a paper entitled "A Working Classification of the Gastro-intestinal Diseases of Infancy," by Dr. Herbert M. Rich:

One-fifth of deaths at all ages occur in children under one year of age. One-half of this mortality is due to gastro-intestinal disease. In addition to this, a large number of deaths occur from the same cause in the second year of life. Altogether this is the largest and most vulnerable single mass of mortality in our statistics.

The sub-classification of these disorders is very imperfect. Examples were given showing the growth of these divisions as the later medical sciences were developed.

The writer pointed out certain clinical entities which have been more or less carefully worked out, and urged that their prompt recognition would greatly facilitate the treatment and improve the chances for recovery. These diseases were:

Recurrent vomiting.

Pyloric spasm and stenosis.

Sensitization to egg albumin.

In addition to these there are Difficult Feeding Cases presenting the same general class of symptoms. It was proposed to divide these according to the food element whose digestion seemed most at fault. In early cases this can be determined very largely by examination of the stool. On this ground proteid indigestion, fat intolerance, and sugar intoxication were discussed and suggestions made for dietetic treatment.

DISCUSSION.

Dr. Thomas Cooley said that one of the questions constantly coming up was that concerning the differentiation between diarrhoeas due to infection and those due to food disturbances. He spoke of Dr. Vaughan's explanation, namely, that the symptoms produced were due to foreign proteins. Dr. Rich had ascribed cyclic vomiting to the presence of acetone. The speaker was not so sure of this; it was doubtful if acetone had anything to do with it. Acetone might itself be a symptom.

Dr. Rowland considered the subject under discussion one of the most important in pediatrics. He referred to the classification of Finkelstein on the basis of etiology. The first class consisted of the balance-disturbance usually produced by overfeeding of fat. Reduce fat, increase carbolyorate; then comes the class showing intolerance to sugar; reduce sugar. In the case of breast feeding reduce the number of feedings. The minimum should be three hours. The fretfulness on the part of a breast-fed baby means that the feeding interval should be lengthened.

Dr. Levy claimed that the simplicity of Finkelstein's classification of food was responsible for its popularity and for the fact that it dominated pediatrics. We were not dealing with single things when dealing with proteins but with proteins in combination with fats and so on. He claimed that the physician got into difficulties when he attempted to make a diagnosis on the condition of the stool alone. Finkelstein also stated that every child possessed a food tolerance which if exceeded the child would fail to thrive.

Dr. John E. Clarke suggested the simple Finkelstein's classification of food was responsible for ill-feeding, which would result in gastric disturbance, intestinal disturbance, diarrhoea, cholera infantum.

Dr. Rich closed the discussion.

Dr. G. Van Amber Brown read a case report describing a large vesical calculus in a woman.

State News Notes

Dr. V. C. Vaughan, Sr., addressed the annual meeting of the Pennsylvania State Medical Society during the latter part of September on "The Conservation of Health."

We are informed of the marriage of Dr. Edwin M. Stanton of Detroit to Miss Annette Phyllis Elliot of Windsor on September 25th, 1913.

Dr. L. C. McMillian, a former practicing physician of Kalamazoo, but for the past two years a resident of Maryland, has returned to Kalamazoo and entered general practice in that city.

Dr. R. P. Mason of Detroit was thrown from his machine after being run into by another speeding touring car and sustained a dislocated right shoulder on September 27th.

Dr. W. J. Wilson, Jr., of Detroit, has removed his office to rooms 201-202 Gladwin building, 270 Woodward avenue. The doctor announces the limiting of his practice to diseases of the heart and blood-vessels.

Dr. Jerome J. Robbins of Petoskey will make his future home in St. Petersburg, Fla.

Dr. R. B. Coonley of Detroit departed Oct. 5 for six months' study in the New York Eye and Ear Hospital. In the spring it is the doctor's intention to study abroad and eventually return to Detroit to practice his specialty.

Dr. Fred L. Lang has begun suit to recover $1,000 from Marine City, which he alleges is due him for services rendered.

Dr. Charles Kennedy, of the "Drs. K. & K." fame was sentenced to the Detroit House of Correction for ninety days for circulating obscene literature. The Wayne County Medical Society Bulletin in commenting upon the case states:

"The Wayne County Medical Society Weekly wishes to commend the precedent established by Judge Hosmer in meting out a jail sentence to the recently convicted Drs. K. & K. It is a token of appreciation of the honest practice of medicine that we are glad to applaud."

Dr. C. D. Pullen, one of the oldest practicing physicians in Mount Pleasant, has moved to Kalamazoo.

Dr. Herbert D. Knapp of Flint has entirely recovered from his recent attack of typhoid fever and resumed his practice.

Dr. Wayne Smith, for two years superintendent of the St. Louis City Hospital, has accepted the appointment as superintendent of Harper Hospital in Detroit.

Dr. Frank Smithies, formerly of Ann Arbor and recently of Rochester, Minn., has established an office in the Peoples Gas Building in Chicago. He

will limit his practice to the diagnosis of medical and surgical diseases of the digestive system and laboratory examinations of gastro-intestinal specimens.

Grace Hospital in Detroit is to have a new $40,000 service building. The Superintendent, Dr. Babcock, has been instructed by the hospital board to immediately proceed with the construction. The building will be located at the rear of the hospital and will have a frontage on Alexandrine and Brush blvds.

The new laboratory of the Board of Health of Kalamazoo is completed and city chemist George White and Dr. C. H. Clark, state dairy and food inspector, have taken possession.

The freshman class of the medical department of the University numbers over 100, against a registration of 85 of last year. There is a similar increase in registration in all the departments of the University and it is estimated that the total number of students in Ann Arbor is more than six thousand.

The council of Flint has passed an ordinance prohibiting employers from permitting employees suffering from tuberculosis or "any infectious or contagious disease" to work in the same room with other persons. To be able to return to their employment a physician's statement is necessary.

A movement is on foot for the doctors of Cheboygan to establish a hospital in that city.

The University of Michigan health service established by the university at the opening of college this fall is expected to put Michigan on a par with other progressive universities in caring for the health of students.

Three physicians will comprise the staff of the service, Dr. Howard Cummings, in charge, Dr. C. B. Stouffer, for those students who prefer homeopathic treatment and Dr. Elsie Pratt, formerly of Denver, Colo., who will care for the women students of the university

"The object of the service is to raise the standard of health among the students, as well as care for the sick," said Dr. Cummings today. "We expect to have compulsory examination for every freshman student, although that rule may not be enforced this year. The physical directors will examine each freshman before he is allowed to take gymn work, which is also compulsory. It will be the duty of these physical directors when they find students who are not normal, or in whom they believe they have discovered an incipient disease, like tuberculosis, to report the matter to us immediately."

The Annual Dinner of the Academy of Medicine of Grand Rapids was held in the Peninsular Club on Wednesday evening, Oct. 1, 1913, with some forty-six doctors in attendance. After a delightful menu the following program of toasts were responded to under the able direction of the toastmaster, Dr. Burton R. Corbus:

Retiring President's Address—Dr. A. J. Baker.

A Voice from the Ward—Mr. Forris D. Stevens.

Impressions of European Medicine—Dr. Udo J. Wile.

The Doctor and Social Service—Rev. Alfred M. Wishart.

The Doctor's Library—Dr. R. R. Smith.

A most enjoyable time was had and the evening passed exceedingly rapidly as well as pleasantly.

The Semi-annual Meeting of the Board of Registration in Medicine was called to order in the State Capitol at Lansing, Thursday, October 14th, 1913, with all members present. Thirteen applicants for registration presented themselves for examination, twelve as medical practitioners and one drugless healer.

The Board was called to order by Secretary Harrison, and Dr. Alvord was chosen temporary chairman. Sixty-seven ballots were taken for president, Dr. Nyland of Grand Rapids receiving four votes on practically every one, and various other members of the Board receiving six in turn. An adjournment was then taken until nine o'clock Wednesday morning when thirteen ballots were taken; Dr. Nyland receiving four on each ballot; Dr. LeFerve receiving six on seven ballots; Dr. Nafe receiving six on six ballots.

A motion was then made to adjourn indefinitely, which was declared out of order by the Chairman.

A general discussion was then held followed by a recess of five minutes, after which the seventy-first ballot was taken, resulting in seven votes for Dr. Geo. L. LeFerve of Muskegon and three for Dr. Alvord of Battle Creek. Dr. LeFerve was then declared elected and took the chair.

Two ballots were then taken for secretary, resulting in six votes for Dr. Bret Nottingham of Lansing, and four votes for Dr. B. D. Harrison. Seven votes being required under the statute for election, and it being demonstrated that no one could receive the necessary number from the present Board, a motion was adopted to proceed with the regular order of business.

The President appointed the following committees:

Standard of Colleges—Alvord, Nyland, Nottingham, Nafe.

Registration—Dodge, Hume, Maynard, Nottingham.

Legislation — Cornell, Maynard, Nottingham, Dodge.

Examinations—Burr, Nottingham, Nafe, Maynard.

Auditing—Nafe, Cornell, Dodge, Burr.

There being no prospect of arriving at a choice for secretary the board adjourned without electing this officer. About two hundred applications for license from drugless healers were filed.

Book Notices

THE DISEASES OF CHILDREN. By Henry Enos Tuley, M.D., with one hundred and six engravings, and three colored plates. Second Revised edition. Cloth. Six hundred fifty-five pages and index. Price $5.50. C. V. Mosby Company, St. Louis, Mo.

The practitioner and student are presented with this, the second edition of a work that has been especially written for them. This revision has enhanced the value of this work, and has enabled the author to incorporate the new principles and teachings that have been accepted since 1909. New food formulas have been added, and methods for the production of certified milk are given in full in the appendix. The chapter on the skin diseases of children is complete, and bound to be of valuable aid in the treatment of these conditions. The plate depicting the buccal exanthema in measles (Koplik's Spots) is the first illustration to our knowledge in a text book that shows the spots as they appear in the mouth.

The work is eminently practical and may be commended as one that will satisfy the needs of both practitioners and students. By reason of this it should increase its success and command a cordial reception.

A TREATISE ON THE DISEASES OF WOMEN. For Students and Practitioners. By Palmer Findley, B.S., M.D., Professor of Gynecology, College of Medicine, State University of Nebraska; Gynecologist to the Clarkson Memorial Hospital and Douglas County Hospital; Fellow of the American Gynecological Society; Fellow of the American Association of Obstetricians and Gynecologists; Fellow of the Chicago Gynecological Society. Octavo, 954 pages, illustrated with 632 engravings in the text and 38 plates in colors and monochrome. Cloth, $6.00, net. Lea & Febiger, Philadelphia and New York, 1913.

This new work offers a complete exposition of the subject of diseases of women, and brings out many points of view not generally emphasized in books on gynecology. A very important feature is the full discussion given to conservative methods of treatment, such as douches, baths, exercise, massage, diet, dress and tampons, which rarely receive the consideration which their importance merits, either in books or in actual practice. Separate chapters are devoted to Non-operative Methods of Treatment, Hygiene and Dress, Preparation of Patient for Operation, Preparation of Operating Room, Field of Operation and Surgical Utensils, Choice of Anesthetics, Diet, Post-operative Complications and Care of Patients after Operation. Diagnosis has been placed on an anatomical basis, for it is pre-eminently true of diseases of women that the making of a diagnosis is in large part the recognition of the morbid anatomy. Another valuable feature is the presentation of certain subjects which may be considered as on the borderline between gynecology and obstetrics, for the separation of these two subjects is an illogical one. The book is very rich in its pictorial department, for in the text there are 632 engravings, besides 38 plates, many of which are colored. They have been inserted wherever it was possible to make clearer the point under discussion.

This work is a welcome addition to the books treating on this subject and merits a place with the best of them. A useful, reliable and practical reference work for every doctor. It is commended as the best recent work upon the subject.

OBSTETRICS. A Manual for Students and Practitioners. By W. P. Manton, M.D., Professor of Obstetrics and Clincal Gynecology, Detroit College of Medicine, Detroit, Mich. Second edition, revised and enlarged; including selected list of State Board Examination Questions. 12mo, 292 pages, with 97 engravings. Cloth, $1.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

This little volume fills admirably the twofold purpose for which it was created, namely, a convenient manual by which the physican can quickly refresh his memory, and an excellent means by which the student can review his course on obstetrics in preparing for examination. The questions appended to each chapter will be found a strong stimulus. The revision for this new edition has been so thorough that it has amounted virtually to a rewriting, so that the book is really a new one. It is exceptionally well illustrated, and is typographically all that could be desired. Its large circulation is apparent in the unusual value which the purchaser receives.

We feel that Dr. Manton's many former students in this state will want this excellent manual and will prize its possession on account of their former associations with the author.

THE PRINCIPLES AND PRACTICE OF GYNECOLOGY. For Students and Practitioners. By E. C. Dudley, A.M., M.D., Professor of Gynecology in the Northwestern University Medical School, Chicago. Sixth Edition, thoroughly revised. Octavo, 795 pages, with 439 illustrations, of which many are in colors, and 24 full-page plates. Cloth, $5.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

Dudley is unquestionably one of the strongest books on gynecology in the English language. Ever since its original publication, fifteen years ago, it has occupied the foremost place among American works on this subject, and the appearance of this new edition serves to strengthen it in this leading position. It's splendid record is evidenced in the complete originality of its elaborate engravings and plates, a feature possible in very few publications. Each one is designed to illustrate some special point in the text, and numerous series of drawings explain operative procedures as they take place, step by step. In its pictorial department the work stands unrivaled. The arrangement of the book is another excellent feature. The subjects are presented in pathological and etiological sequence, so that the reader will have constantly before him the physiological and pathological unity of the reproductive system, and will see the correlation of the morbid processes to each other. The text shows that it has had thorough revision throughout. Several chapters have been entirely rewritten, and many new illustrations added. In its latest issue this standard work is well equipped for a new period of usefulness as the recognized authority.

To own this book, to study its teachings, to familiarize oneself with its principles and then to apply this knowledge in one's daily work will enable such a person to render to his patients services that will not only be appreciated but that will endow him with the ability of caring for his gynecological cases in keeping with the practice of the leading clinics in the land.

THE PROTEIN SPLIT PRODUCTS IN RELATION TO IMMUNITY AND DISEASE. By Victor C. Vaughan, M.D., LL.D., Dean of the Department of Medicine and Surgery of the University of Michigan, Victor C. Vaughan, Jr., M.D., A.B., in charge of the Tuberculosis Work of the Detroit Board of Health and J. Walter Vaughan, M.D., A.B., junior attending Surgeon to Harper Hospital, Detroit. 12mo, 476 pages illustrated. Cloth, $3.00, net. Lea & Febiger, Publishers, Philadelphia iand New York, 1913.

This work sets forth the studies and researches of many years in a department of medical science which is now attracting universal attention and intense interest. Modern laboratory methods have made it possible to inquire into the means by which the normal organism defends itself from pathogenic agents, the condition of each before, during and after infection, and the general results of the process. An understanding of these problems at once conveys a new insight into physiology and pathology, and creates new and distinct methods of diagnosis, therapeutics and prophylaxis. Among the subjects of prime importance which this work discusses may be mentioned proteins and the infectious diseases; protein sensitization and bacterial immunity; vaccines, toxins and bacterial cellular substances; cleavage of proteins into poisonous and non-poisonous parts; the action of the living bacillus, the dead bacillus and of the poisonous split product; the production of active immunity with split products of the colon bacillus; the tubercule bacillus; the relation of tuberculo-sensitization to immunity; anthrax protein; pneumococcus protein; protein sensitization and the physiological action of the protein poison; protein fever; specific ferments of the cancer cell; the phenomena of infection; vaccines and sensitization. The large number of im-

portant and interesting topics, only partially mentioned above, which this volume treats, makes it an invaluable part of the equipment of the physician who would be modern in his methods and abreast of the most recent thought in medicine.

From time to time in the years that are passed many of our members have been entertained at the meetings of our local and state societies by the papers presented upon this subject by the senior author and in recent years by Dr. V. C. Vaughan, Jr., and Dr. J. Walter Vaughan. We have all profited by reason of this and many of us have longed to have the authors' theories, experiments, investigations and deductions condensed or rather compiled in book form so that we might better be enabled to become more conversant with the scientific features and practical application of them. Our desires have been complied with in the issuance of this valuable book. We urge the purchase of this volume by every reader and then if he will but familiarize himself with its contents we feel assured that he will be enabled to more readily keep abreast with teachings of our present day theories regarding immunity and disease and thereby become an abler physician.

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles on treatment, medicine, surgery and their allied specialties. By leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A.M., M.D., Philadelphia. Cloth, pp. 303. Vol. III. 23rd series, 1913. J. B. Lippincott Company, Philadelphia. Price, $2.00.

To him who desires to possess a volume that contains a series of papers that represent the teachings and progress of present day medicine we commend this number of these recognized valuable clinical reports. There is so much that is good in them that the reviewer cannot even commence to note or comment upon any given article. The volume as a whole tends to increase the value and reputation of the series, and this should appeal to general practitioners and specialist alike.

ESSENTIALS OF PRESCRIPTION WRITING. By Cary Eggleston, M.D., Instructor in Pharmacology, Cornell University Medical College, New York City. 32 mo. of 115 pages, W. B. Saunders Company, 1913. Cloth $1.00 net.

This little volume is intended to provide the student in medicine with a succinct, yet sufficient treatment of the subject of prescription writing and to prepare him to construct a grammatic and proper prescription to fill any need. The work is a crystallization of the author's experience in teaching the subject.

It is such a valuable little volume and contains so much that is of daily value to the practitioner that we cannot help but recommend it to them in addition to the students.

DIET AND HEALTH IN DISEASE. By Julius Friedenwald, M.D., Professor of Gastro-Enterology in the College of Physicians and Surgeons, Baltimore; and John Ruhrah, M.D., Professor of Diseases of Children in the College of Physicians and Surgeons, Baltimore. Fourth edition thoroughly revised and enlarged. Octave of 857 pages. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $4.00. Half Morocco, $5.50 net.

The authors and publisher present the profession with the fourth revision of this valued work that is intended to meet the needs of the general practitioner, hospital interne, medical student and trained nurse. It is a work that is entirely practical and imparts valuable information as to how to feed and what to feed a patient. It is so practical that even the busiest practitioner may by rapid reference seek and secure desired assistance.

The changes in opinion that have occurred in recent years regarding diet and the health and the new facts as to food and metabolism will be found in this edition. A chapter has been added upon the mechanism of digestion.

All in all the work is thoroughly in accord with the progress that has been made in this line and consistent with the opinions and teachings of recognized authorities in this subject.

No work of recent publication is more thorough or more complete. We unhesitatingly declare this volume as essential to the working library of every doctor. It should be frequently referred to in your daily work.

THE ELEMENTS OF BACTERIOLOGICAL TECHNIQUE. By J. W. H. Eyre, M.D., Director of the Bacteriological Department of Guy's Hospital, London. Second Edition, rewritten and enlarged. Octavo of 518 pages, with 219 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $3.00 net.

The Saunders Company have placed before the profession this second edition of this volume, and it is a distinct pleasure to acknowledge the privilege of expressing our opinion of it. We can do no other way than to commend this work to our readers and to laboratory workers. It is a book filled with the various methods at present used in the study of bacteria and the elucidation of such points in their life history as are debatable or still undetermined. Some of these methods are new, others are not; but all are reliable and capable of giving satisfactory results even in beginners' hands. It contains, we judge, the technic employed in the author's department in Guy's Hospital

It is a work that undoubtedly will find much favor with the laboratory workers of this country and with him who is employing laboratory means and findings in his regular practice. We find nothing to criticize, but much to commend. The publishers' name conveys in itself typographical, illustrative and mechanical perfection.

A CLINICAL MANUAL OF MENTAL DISEASES. By Francis X. Dercum, M.D., Ph.D., Professor of Nervous and Mental diseases, Jefferson Medical College, Philadelphia. Octave of 425 pages. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $3.00 net.

This is a volume dealing with mental diseases in such a way as to be entirely practical. Simple yet thorough and based upon clincal pictures so that one is readily able to become conversant with the various forms and stages of mental derangements and recognize them in their early stages. The author imparts to the reader a commendable arrangement of the text and thus enables the practitioner to readily grasp a working knowledge of mental diseases and what to do under given conditions, when to commit and when not to commit a patient to an asylum, and how the patient should be treated in his own home or elsewhere outside of an institution.

It is a work that will appeal to him who is not disposed to delve deeply into the problems of psychoanalysis or psychiatry. It deserves a kindly reception for it supplys a distinct need. The author's reputation in itself is sufficent endorsement.

BULLETIN OF THE STATE BOARD OF HEALTH OF KENTUCKY. Edited and published by the State Board of Health of Kentucky, being the compiled reports

for the years of 1910 and 1911. Bound in cloth, 609 pp.

This annual report is thankfully received. In it is contained much information for him who is interested in what is being done in Kentucky for the conservation of public health. A valuable report and reference work for health officials.

MEDICAL AND SURGICAL REPORTS OF THE EPISCOPAL HOSPITAL OF PHILADELPHIA. Vol. I, cloth, 406 pp. Edited by Astley P C., Ashhurst, M.D.

This report contains the annual statements of the hospital and its various departments, and in addition the papers of certain of its staff members. We feel that the expense and labor entailed in publishing this volume is not justified. The medical and surgical articles contained therein would be of more benefit to the entire profession if imparted through the mediums of existing medical journals. We should very much dislike to see our hospitals adopt this plan as we cannot conceive of any marked benefit that will accrue therefrom.

Miscellany

MEDICAL MILK COMMISSIONS AND CERTIFIED MILK.

The first bulletin in the new departmental series of the U. S. Department of Agriculture is a contribution from the Bureau of Animal Industry entitled Medical Milk Commissions and Certified Milk; this is a revision of a previous bulletin on the same subject.

The organization and objects of the first milk commission are described and the origin and meaning of "certified mlk" are set forth. The word "certified" has been registered in the U. S. Patent Office and may only be used by a duly organized medical milk commission.

The first milk commission was organized in 1893. Since that time over 60 commissions have been established, but nearly one-third of that number are inactive at present.

About 125 dairies are engaged in producing certified milk and the daily production is nearly 25,000 gallons, an increase of 300 per cent. in five years. While this seems a remarkable increase, it should be remembered that only about one-half of 1 per cent. of the total milk supply of the country is certified.

While the chief demand for certified milk is for infants and sick people, it further serves to teach the public the value of careful methods in milk production and the extra cost of absolutely clean milk.

The bulletin describes the equipment and methods necessary for the production of certified milk. It is pointed out that expensive equipment is not a necessity so much as a careful and unremitting attention to details.

In 1907 the American Association of American Milk Commissions was organized. The methods and standards for the producton and distribution of certified milk adopted by this association at its 1912 meeting are given in the appendix to the bulletin.

A LAYMAN'S ADVICE ON ORGANIZATION METHODS

Suggestions of value to our medical societies can often be obtained from civic organizations. In a recent issue of *Suburban Life* Mr. H. J. Howland entertainingly and instructively recites his experiences as president of the Civic Association of Montclair, N. J. "The point," Mr. Howland says, "is to begin with something definite and not too hard, something that needs not discussion but doing. If you have a civic association or improvement society [or, he might have added, a medical society] there is one thing you must avoid like the plague—the adopting of resolutions. The resolution habit is worse than drink, worse than the opium habit. In my brief and inglorious career I put many resolutions to vote, saw them adopted with enthusiasm, and then decorously interred in the archives until I shuddered at the thought that New Year's Day was coming. Do not pass resolutions. Get out and do things." Better advice to our medical organizations could hardly be conceived. Medical societies have from time immemorial been afflicted with the resolution habit. Simply passing resolutions never did anything. If there is something that ought to be done in city, county, state or nation, let us not pass resolutions, but if it can be done, let us go and do it.—*Jour A. M. A.*

PROPRIETARIES IN GREAT BRITAIN.

The National Insurance Act under which many now receive practically free medical service provides that, under certain conditions, the physicians who work under the act, may receive some of the funds set aside for the purpose. This has tended to make unpopular the prescribing of expensive proprietaries rather than the cheaper official preparations. Those medical journals which derive a large portion of their advertising income from proprietary medicine advertisements are not feeling happy. These publishers are between the devil and the deep blue sea. If they come out openly in favor of prescribing high-priced proprietaries in place of the lower-priced official drugs, they are asking their subscribers to do something which is not only unscientific, but also contrary to the financial interest of the physicians working under the act. (Jour. A. M. A., Sept. 13, 1913, p. 872.)

THE FRIEDMANN INSTITUTES.

The Friedmann cure for tuberculosis is utterly discredited. All reliable reports regarding the treatment of patients by Friedmann's method seem to show either that it is actually injurious or else that it is less efficient than other well known and less dangerous means of treatment. The scheme of floating Friedmann institutes in different states successfully evades any reprisal on the part of the federal government. It therefore devolves on the various states to take such action as is necessary to prevent the heartless exploitation of the unfortunate consumptives within their borders. (Jour. A. M. A., Sept 13, 1913, p. 874.)

DIPHTHERIA ANTITOXIN AS AN IMMUNIZING AGENT

Diphtheria antitoxin is quite generally used as an immunizing agent. Usually a dose of 500 units is given to all the children in a family in which a case of diphtheria has developed. In such instances no attention is paid to the possibility or anaphylaxis on later injection or diphtheria antitoxin. Indiscriminate immunization by the injection of serum is not advised by any writers on this subject. To avoid serious results from anaphylaxis in cases in which known immunizing doses have previously been given, it is customary to inject first a small dose of from 5 to 8 minims, and if no symptoms develop, to follow this within an hour with the full dose which it is desired to inject. (Jour. A. M. A., Sept. 13, 1913, p. 885.)